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Vol. 12
Pioneer Seed Co.
Dimondale, Mich.

Saier's **GARDEN**
MAGAZINE

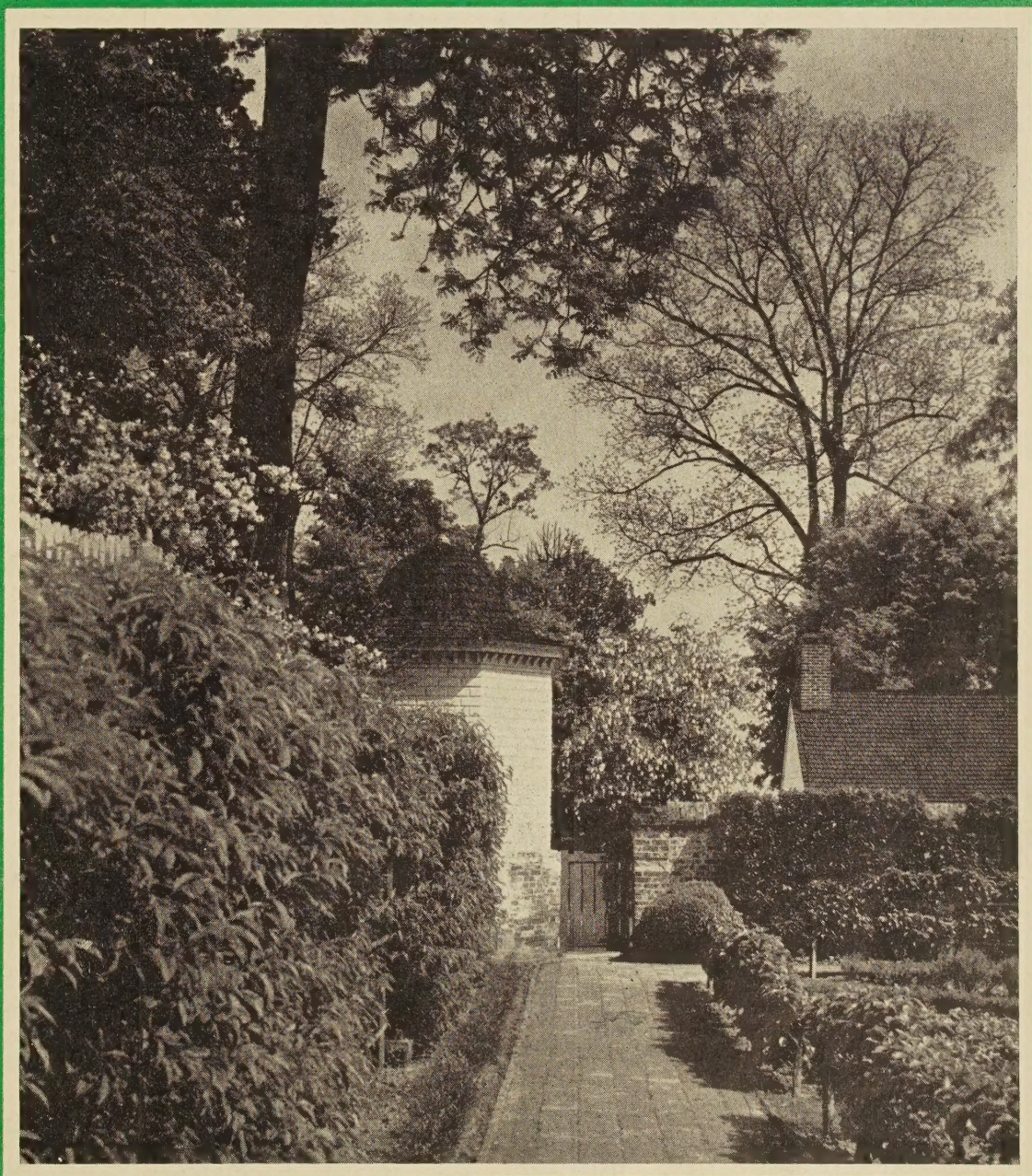
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U. S. Department of Agriculture

A MANUAL OF RARE FLOWERS, THEIR SELECTION AND CULTURE

Vol. 2, No. 12.

JUNE, 1951

25 Cents



The Gardens at Mount Vernon
also Special Iris Issue

40 YEARS
of
EXPERIENCE

OUR 110 BEST TALL BEARDED IRIS

AIRY DREAM. .30¢

Clear soft pink; L-33".

ADMIRAL NIMITZ. \$4.50

Stately white with a thick orange beard; vigorous grower; finely formed flowers.

ALADDIN'S WISH. \$2.00

Porcelain blue brushed with cream, very lovely; bloom very large; most unusual.

AU-LU-WE. .35¢

Large bronze and red variegata, very good; M-40".

AMALIA. .25¢

Dahlia-like dark red; M-36".

AMBASSADEUR. .30¢

Hyssop and carmine, AM; ML*-42".

AMBROSIA. .35¢

A fine satiny pink; M-36".

AMIGO. .50¢

Pansy color, clear light lavender S, with lovely foiled deep purple-velvet F; a rare color gem; HM, AM; M*-34".

AMITOLE. .30¢

Russet pink and gold blend; L-38".

ANGELUS. .45¢

Huge mauve pink, HM, AM; ML-38".

ARAB CHIEF. \$3.00.

Beautiful burnt-orange self, HM; 36".

ARCTIC. .50¢

Warm creamy white with gold throat, with generous overflow of yellow on the falls; HM, AM; 40".

AT DAWNING. .35¢

Standards pinkish white with gold at the base; falls are a soft rose, beautifully gold veined throat and deep orange beard; HM, AM M*-36".

AVONDALE. .40¢

A lovely strawberry toned red; HM; M-33".

AZURE SKIES. .80¢

Ruffled pale azure-blue; HM, AM; M*-36".

BALDWIN. .25¢

Lavender-violet; HM; M-40".

BALLET GIRL. .50¢

Dainty apple-blossum pink, very fine color; ML-24".

BERKELEY GOLD. .70¢

Large deep clear yellow self; L-32".

BERMUDA SAND. .50¢

A lovely coffee-tan color; ML*-36".

BLACK HAWK. .65¢

Rich velvety-purple, one of the darkest Iris; try it with rich yellow sorts; HM, AM; E-28".

BLUE HILL. .25¢

Ruffled Cornflower blue; M-40".

BLUE RHYTHM. \$3.00

Very large flowers of Cornflower-blue; the 1950 Dykes Medal Winner; tops; M-38".

BLUE SHIMMER. .90¢

Lovely plicata, white dappled with blue; HM, AM; L-36".

BLUE TRIUMPH. .30¢

Fine soft light blue with flaring falls; HM; M-42".

TALL BBEARDED IRIS

These range from 30 inches tall and up to 48 inches. They are grown in larger quantity than any other type and also have received more attention from Iris hybridizers.

They are the latest to flower and there is no limit to the many beautiful colors and Delivery time starts about July 15th and continues to fall; order early as possible tho.

BRANDYWINE. .30¢

Large silvery blue; M, 36".

BRUNHILDE. .35¢

Handsome deep blue, AM, HM; M*-38".

BUCKSKIN. .40¢

Almost a buckskin tan self with large flowers; 40".

BUFFAWN. .40¢

Lovely light fawn standards and light pinkish buff falls; EM-34".

BUTTERCUP LANE. .45¢

Heavily ruffled buttercup-yellow; effective in clumps; HM; E*-31".

CALCUTTA. .35¢

Cocoa-brown tones overlaid with a bluish veil, M*-42".

CALIFORNIA PEACH. .35¢

fA pink and apricot blend shaded with old rose; HM; M*-38".

CAPT. COURAGEOUS. .30¢

Rose-buff; M-44".

CARFAX. .30¢

Huge auricula purple; M-48".

CHEERIO. .35¢

Falls rich satiny ruby-red with orange beard; standards soft rose flushed yellow; HM, AM; very nice; 40".

CHINA MAID. .35¢

Pink blend, bronze and lilac; HM, AM; ML*-40".

CHRISTABEL. .35¢

A sheer brilliant red; HM, AM; M*-40".

CITY OF LINCOLN. .50¢

Queen of the variegatas; clear golden yellow S with fiery red F; a lovely contrast; HM, AM; M-42".

CLARA NOYES. .30¢

Ruffled pinkish apricot and always popular; HM, AM; M-33".

CLARIBEL. .35¢

White frilled blue S and white F; plicata; HM; L*-45".

COPPER LUSTRE. .40¢

Iridescent luminous copper self; DM'38; HM, AM; M-42".

SYMBOLS USED: GM, Gold Medal; SM, Silver Medal; AM, Award of Merit; HM, Honorable Mention; DM, Dykes Medal; the height in inches (""); E, early; M, medium early or medium late, ML; L, late; LL very late; F, falls; S, standards.

COPPERSMITH. .30¢

Lovely copper color sheen; ETAOINETAO Flushed magenta, copper sheen; M-42"...

CORONET. .35¢

Beautiful blended golden tan, HM; L*-42".

CORRIDA. .30¢

Sky blue veined darker; AM; ML-42".

CRYSTAL BEAUTY. .35¢

Tall clear white, large gold beard; ML*-45".

CYRUS THE GREAT. .35¢

Lovely velvety large deep violet; E-38".

DEPUTE NOMBLOT. .35¢

Claret crimson flushed bronze; DM' 30; M-52".

DESTINY. .35¢

Lovely plum color; AM; ML-38".

DIRECTEUR PINELLE. .35¢

An AM, dark bronze-red, M-48".

DOGROSE. .35¢

A superb delicate soft pink; M- 48".

DOLLY MADISON. .30¢

Mauvette flushed pale colonial buff, heavy substance, HM; E-36".

DORE. .30¢

Pretty daffodil color, new type, ML*-40".

DUKE OF BEDFORD. .30¢

Dark blue; AM; E- 34".

DYMIA. .35¢

A fine deep purple self; HM; M*-38".

EASTER MORN. .35¢

Very fragrant pure sparkling white with a satiny sheen and glowing yellow center; HM, AM; M*-42".

ELSA SASS. .35¢

Exquisite new Iris in a bewitching shade yellow with white blaze on falls; HM, AM; ML-30".

EL TOVAR. .35¢

Honey yellow S and almost black F; HM, AM; M-36".

ETHELWYNN DUBAUR. .35¢

Deep orchid-pink self, ML*-38".

EXCLUSIVE. .35¢

Clear light blue, F a deeper shade, very distinct and exclusive, HM, AM; M*-38".

FAIR ELAINE. .35¢

Stately flower of cream-white S and rich golden F; HM, AM; M*-40".

FLORA ZENOR. .50¢

Soft cameo-pink with deeper lines of rose at the haft, and rich orange to tangerine beard; HM, AM; LM-40".

GLORIOLE. .35¢

Soft lobelia-violet self with a greenish flush at center, flowers 7" across; HM, AM; ML--38".

GOLDEN FLEECE. \$1.75.

Ruffled symphony in pure sulphur to lemon-yellow with white spot at end of gold beard; good stem and substance, HM, AM; L*-40".

GOLDEN HIND. .40¢

Buttercup yellow tinted with orange, extra nice; DM'34; E-35".

(List Continued on Inside Back Cover)

PIONEER SEED COMPANY - DIMONDALE MICH.

THE GARDENS at MOUNT VERNON

By Robert B. Fisher
Horticulturist at Mount Vernon

General Washington came into possession of the Mount Vernon plantation in 1754. At the time he was serving as commander of Virginia militia and continued in service until 1758. He saw Mount Vernon but infrequently during this period. In January, 1759 he married Martha Dandridge Curtis. In September of that year he received '1½ doz. Bell Glasses for Garden' from his factor in England; this is the first indication of his horticultural interest.

There are many scattered references to the garden areas and activities of the Washington's letters, diaries and accounts. From the close of the Revolution until his death in 1799 the evidence afforded by these and other sources is much more informative.

Early Garden Plans

Most of the surviving data relates to development of plan and to trees and shrubs in which General Washington was interested. The lack of recorded information concerning the herbaceous ornamental plants is explained by the fact he employed a skilled, indentured gardener and allowed this man a free hand in his selection of material in this category. The various gardeners submitted weekly reports, accounting for the work accomplished, but the reports which are still available are brief, general outlines with little data concerning the herbaceous ornamentals. Yet there is a fair amount of detail concerning fruits and vegetables.

From the published diaries and letters, we can easily trace the enlargement of the formal area about the Mansion House, a development which was planned before the Revolution and substantially completed in the years immediately following. The west lawn or 'Bolling Green' was es-



The Kitchen Gardens at Mount Vernon as they are today

tablished in 1785 and the front gate was relocated to the west end of the lawn. The mounds at the west end of the 'Bolling Green' were raised and weeping willows were planted thereon. The serpentine roads or walks were laid out, graveled and then bordered with native trees. The intervals between the trees were planted with weeping willows, and the area between the serpentine

roads and the garden walls were planted with ornamental trees and shrubs. In later years the weeping willows along the serpentine roads were replaced by Lombardy poplars.

The walled gardens at each side of the 'Bolling Green' were the principal features of General Washington's landscape plan. To the north was the 'upper garden' traditionally the flower garden, although some fruits were grown here. On the north side of this garden was a handsome greenhouse, flanked at each end by servants quarters which opened into a service area beyond. A small octagonal structure, a garden feature referred to as the 'school house', was located at the point of the two elliptical walls at the west end of the garden. There was another octagonal house, outwardly identical, occupied the southeast corner but this was a 'necessary' approach from the courtyard side. In 1798 the gravel paths in this garden were edged with dwarf English boxwood which has remained virtually intact through the years and now dominates the entire garden.

The Herbaceous Ornamentals

There are two 'parterres' or flower knots in this garden in front of the greenhouse. Two rose gardens within the flower garden contained plants of the period. There are four long, formal "flower plots" or borders, and the west section of the garden is laid out with elliptical, informal borders.

The only herbaceous ornamentals noted in General Washington's own published writings or other available sources are the bachelors buttons (*Gomphrena globosa*), cardinal flower (*Lobelia cardinalis*), crown imperial (*Fritillaria imperialis*) flower fence (*Caesalpinia pulcherrima*) geranium (*Pelargonium zonale*), the tall

Continued on page two.



The Perennial Gardens at Mount Vernon as they are today

The Gardens at Mount Vernon

Continued from page one.
double rocket larkspur (*Delphinium Ajacis*), wasp double larkspur (*Delphinium elatum*), everlasting or Lady peas (*Lathyrus latifolius*), and sweet Painted Lady peas (*Lathyrus odoratus* variety). These and other herbaceous ornamentals known to have been grown in the 18th century Virginia gardens compose all the present planting list.

The Botanical Garden

To the east of the garden, between the garden wall and the spinning house, is the 'Botanical Garden'. This was the nursery area and first designated and used as such by General Washington in the spring of 1785. It was frequently referred to as his 'little garden'. This space was continuously used for the growing of seedlings or small stock of special interest, acquired from time to time in small quantities. The area, located in close proximity to the Mansion, was undoubtedly supervised by General Washington, and in his absence by the manager, as evidenced by the dairies and writings.

The Mount Vernon kitchen garden, south of the 'Bolling Green', is symmetrical in outline with the flower garden to the north, but it is terraced in two levels, both below the level of the flower garden and the 'Bolling Green'.

Immediately inside the gate is a box bordered walk extending the width of the first terrace. Sections of these hedges were wintered killed fifty years ago, but have made a splendid recovery from the original roots. These walk bordereds are believed to be of the same age as those in the flower garden.

The Kitchen Garden

Another octagonal garden house is located at the apex of the elliptical walls at the west end of the kitchen garden. An octagonal house in the northeast corner balances the one at the southeast corner of the flower garden.

The kitchen garden was in turn cultivated and neglected through the nineteenth century and there is little surviving evidence of General Washington's

planting plan. The garden was restored in 1936 as a typical kitchen garden; it contains the features and plants mentioned in the published writings and in the gardener's weekly reports. Typical hot bed frames, dipping wells, and a bee house are presented in this garden. The vegetable beds are laid out in small squares or rectangles and are bordered with culinary and aromatic herbs. The paths between the beds are maintained with turf. Fruit trees are espaliered against the walls and horizontal espalier fruit trees are planted along the principal paths. The stock of some of the fruits grown today is descended from that grown during General Washington's lifetime. All of the material grown in the kitchen garden is documented by General Washington's writings or the weekly reports of his gardeners. Following is a list of this material:

The Vegetables Grown

Asparagus, Beans (bush, pole and limes) Beets, Broccoli, Cabbage, Carrots, Cauliflower, Swiss Chard, Cucumbers, Egg Plant, Kale, Lettuce, both head and loose leaf, Onion and Onion Asparagus, Parsnip, Peas, Peppers, bird and hot, Potatoes, Sweet Potatoes, Radishes, Rhubarb, Ruta Bagas, Spinach, Winter and Summer Squash, Tomatoes and Turnips.

The herb garden was more extensive than present gardens.

Artichokes, Sanctum and Sweet Basil, Catmint, Chives, Germander, Horse-radish, Hyssop, Lavender, Lavender Cotton, Lemon Balm, Marjoram, both Sweet and Knotted, Mint, Nasturtium, Parsley, Pennyroyal, Rosemary, Rue, Sage, Winter Savory, Swiss Chard, Tarragon, common and French Thyme.

Apples, Apricots, Cherries, Figs, Grapes, Nectarines, Peaches, Pears, Plums, Quince, and Strawberries.

By Robert B. Fisher, Horticulturist at Mount Vernon and in collaboration with Mr. Charles C. Wall, Resident Superintendent of the Association and by courtesy of The Mount Vernon Ladies' Association.

Sweet Rocket (*Hesperis matronalis*)
Sciatica Cress (*Iberis gibraltarica*)
Shrubby Sciatica Cress (*I. sempervirens*)
Balsam (*Impatiens balsamea*)
Lantana (*Lantana camara*)
Everlasting Pea (*Lathyrus latifolius*)
Lavater (*Lavatera splendens*)
Madonna Lily (*Lilium candidum*)
Perennial Flax (*Linum perenne*)
Lemon Verbena (*Lippia citriodora*)
Cardinal Flower (*Lobelia cardinalis*)
Blue Cardinal Flower (*L. siphilitica*)
Honesty (*Lunaria biennis*)
Maltese-Cross (*Lychnis chalcidonica*)
Dusty Miller (*Lychnis coronaria*)
Ragged Robin (*L. Flos-Cuculi*)
Stock Gilliflower (*Mathiola incana*)
Four O'clocks (*Mirabilis jalapa*)
For-get-me-nots (*Myosotis alpestris*)
Tobacco (*Nicotiana affinis*)
Evening Primrose (*Oenothera biennis*)
Peony
Scented Geranium (*Pelargonium biennis*)
Purple Basil (*Purilla frutescens*)
Spring Phlox (*Phlox ovata*)
Perennial Phlox (*Phlox paniculata*)
Jacob's Ladder (*Polemonium caeruleum*)
Greek Valerian (*Polemonium repans*)
Caster Bean (*Ricinus communis*)
Periwinkle (*Vinca rosea*)
Atamasco Lily (*Zephyranthes Atamasco*)
Zephyranthes candida

FERDINAND

FRENCH MARIGOLD FERDINAND.

The Harmony types of the French Marigolds make excellent cutflowers, as well as attractive groups in the border.



Ferdinand is 2 feet high, single flowers, and in the same group with Flash, Naughty Marietta, Red Head and Josephine. These vary from 1-3 feet in height and therefore are not suitable in mixtures.

All the French Marigolds do best if the seed is sown where the plants are to grow, and not too rich a soil.

Packet 15¢; 1/4 Oz. 35¢, Postpaid.

Partial List of Original Plant Material Now Being Grown in the Mount Vernon Gardens

Following is a partial listing of 18th century plant material which is currently grown in the garden:

Hollyhock (*Althea rosea*)
Columbine (*Aquilegia canadensis*)
Bastard Tower Mustard (*Arabis alpina*)
Garden Daisy (*Bellis perennis*)
Tassel-Flower (*Cacalia coccinea*)
Marigold (*Calendula officinalis*)
Canterbury Bell (*Campanula medium*)
Cockscomb (*Celosia cristata*) red and yellow.
Cockscomb (*C. plumosa*) Feathered
Basket Flower (*Centaurea americana*)
Blue Bottle (*Centaurea cyanus*)
Snow-in-Summer (*Cerastium tomentosum*)
Honeywort (*Cerinthe major*)
Wallflower (*Cheiranthus allion*)
Wallflower (*C. cheirii*)
Perennial Wallflower (*C. linifolius*)
Corn Marigold. (*Chrysanthemum leucanthemum*)

Spider Flower (*Cleome serrulata*)
Spider Flower. (*Cleome spinosa*).
Collinsia bicolor
Perennial Tickweed. (*Coreopsis* gr. fl.).
Daphne Cneorum
Thorn Apple (*Datura meteloides*)
Larkspur (*Delphinium elatum*)
Sweet William (*Dianthus barbatus*)
Sweet Wivelsfield (*D. carthusianorum*)
Clove Gilliflower (*Dianthus plumarius*)
Foxglove (*Digitalis purpurea*)
Poinsettia (*Euphorbia heterophylla*)
Snow-on-the-Mountain (*E. marginata*)
Fuchsia. (*F. magellanica*).
Herb-Bonnet (*Gaem coccinea*)
Bachelor Buttons (*Gomphrena globosa*)
Garden Sunflower. (*Helianthus annuus*).
Strawflower (*Helichrysum bracteatum*)
Turnsole or Heliotrope (*Heliotropium peruvianum*)
Day Lily (*Hemerocallis flava*)

SOME SOUTH RHODESIAN FLOWERS

The following fresh seeds have just been received. All are tender and suitable for outdoor planting only in the far South or southern California. They are all beautiful.

All packets are 25¢ each.

Chironia transvaalensis.
Clerodendrum macrocoides. Glory Bower.
Crinum zeylanicum. Five Seeds 30¢.
Ancilma aequitiale.
Astrocalaena malvaceae.
Erythrina humeana.
" tomentosa. Rhodesian kaffir Boom.
Hypoxis species. Star Grass.
Gladiolus psittacinus.
Moraea zambesiaca.
Sopubia leprosa.
Tulbaghia sp.

We will be pleased to hear from any of our readers who have grown any of the above flowers.

PIONEER SEED COMPANY
Dimondale, Michigan, U.S.A.

Vermiculite

How to use it

As a medium for starting seeds use it as it comes from the bag. When first leaves appear, water with liquid plant food according to manufacturer's directions. Or use half good loam and half vermiculite. No plant food needed up to transplanting time when soil is used in mixture. Vermiculite produces bigger, huskier roots. Seedlings recover from shock of transplanting.

For chrysanthemums, ageratums, etc., use straight. For evergreens, and for certain difficult subjects, use 50:50 sand and vermiculite. Quicker rooting, less watering, fewer losses.

Vermiculite is the perfect material to give sandy soils additional water and plant food holding ability. Ideal for lightening heavy clay soils. Can be used up to one third the total volume of the soil. Valuable in greenhouse in potting mixtures and for improving bench soils.

For use as a winter mulch use it 2 to 3 inches of vermiculite in place of several inches of less efficient material. Prevents drying out; insulates against cold. Stops winter heaving. Work into the soil in the spring.

For storing bulbs and root crops it is an ideal medium. Pour it around the bulbs to be stored. Acts as moisture control, preventing damage from too much or too little moisture. Ideal for storing roots.

Quaint Bellflowers

Like the skunk, the Codonopsis is offensive only when annoyed; its odor, on being handled roughly, is somewhat similar to that of what the Germans call the 'Stinkbeast', but leave it alone, and it will rejoice you with delightful and unusual Bellflowers in midsummer.

There are found, in eastern Asia, a great many species of Codonopsis, ranging from tiny plants to fair-sized vines, often with enormous bells which are more likely to come in strange browns, greens and purples than in the more familiar blue-purples of Campanulas. All come easily and quickly from seed, and most are fairly hardy, at least withstanding zero temperatures. They like rather sunny positions, preferably in moderately light soil, and the trailing ones may be trained over a small bush.

One of the best of the lot, an upright plant that rarely exceeds a foot in height with stems squarely set with very small gray leaves, is *C. clematidea*. The bells, often 2 inches long, are of a soft milky blue-white, with deeper veins, and a brilliant orange spot in the center of the flower. The roots are fleshy, and resistant to heat cold and wet. *C. vinciflora* is an even more delicate, trailer, often prostrate with fine blue wide-open rather starry flowers.

CUTTING SAGE.

One popular method is to clip the first 3 or 4 whorls as soon as the tip leaves show a maximum of gray color.

Do the cutting between 9 and 12 o'clock A. M. Dry the leaves in a shady place but where it is dry and airy.

Store the dry leaves in a sealed container. For small quantities glass jars are ideal.

In good drying weather a period of about 10 days is usually required for satisfactory drying.

FLOWER SEED CATALOG LISTING

ABRONIA (ah-BROH-ni-ah)

Sand Verbena. Dwarf or trailing plants with fragrant white, yellow or pink flowers. Treat as annual, sowing seed early indoor for summer bloom; they do better when planted direct in the open ground and in the South seed can be sown in the fall. Remove husk before planting; often slow in germinating. Sunny, light soils best.

umbellata gr. fl. Rose A pretty little trailer; rose colored fls; HHA.....**ABRO-1** 15¢

ACACIA (ah-KAY-shah)

Shrubs and trees mostly from warm regions and they can be grown outdoors in Calif. 18-20 degrees F as low as they can stand. Soak seed in hot water leaving this to stand 10-40 hours. They grow fast and are ornamental.

Baileyana. Attractive silver-blue fol; bright golden yellow fls; HHS.....**ACAC-3** 20¢

Farnesiana. Very fragrant much branched Sh; 10 ft; Texas; HHS.....**ACAC-5** 25¢

ACANTHUS (ah-KAN-thus)

Bear's Breech Perennials, thistle-like small shrubs; about 3 ft tall, fls white, rose or lilac on 18" spikes. They need heavy winter protection in the North; best in rich well drained soil. Seed sown in April will flower in Aug. THP.

—**mollis v. latifolia.** Broad glossy lvs; curious pale purple fls; HB.....**ACK-1** 20¢

ACHILLEA (ak-i-LEE-ah)

Milfoil or Yarrow. Hardy herbaceous perennials easily grown in any fair soil in full sun. Flowers in clusters of small heads, white, yellow and pink making good cut fls. Seed planted indoors in March will flower same year. They make good border plants.

chrysoma. Dense woolly fol. bright yellow fls; 9", HP.....**ACH-8** 20¢

Clavennae. Finest RG species silvery lvs; white daisy fls 6 in HP **ACH-9** 20¢

filipendulina. This has showy round heads, yellow; robust, 5ft; HP **ACH-10** 20¢

—**Cloth of Gold.** A pretty golden flowered variety.....**ACH-11** 25¢

—**Parker's Variety.** Large clear yellow; 3 ft; extra good.....**ACH-14** 15¢

miliefolium. Round heads of white fls; 2 ft; (6-9) HP.....**ACH-20** 15¢

—**Piarmica, The Pearl.** Double pure white, excellent for cutting; HP.....**ACH-24** 20¢

Taygetea. A new variety; lemon colored heads; 2-3 ft; HP.....**ACH-33** 20¢

Achillea Blend. All species and varieties.....**ACH-X** 15¢

ACONITUM (AK-oh-nyt-um)

Monkshood. Herbaceous perennials, seeds germinate slowly, sow out doors in May or June in shade or they can be started indoors earlier but plants do not like transplanting; thin to 18" apart; bone meal is good as a fertilizer.

palmatum. Blue fls 2½ in. across; Himalayan Mts; HP.....**ACD-16** 25¢

lycottonum. Wolfsbane. Hardy, yellow fls, 4 ft, moist soils, HP.....**ACD-14** 25¢

—**Wilsonii.** Handsome spikes, large porcelain blue fls, late, 3 ft, HP.....**ACD-9W** 25¢

—**Barker's Variety.** Pretty novelty in amethyst-blue, 6 ft, HP.....**ACD-9B** 25¢

Acroclinium: see Helipterum.

ACROCEPHALUS

sericus. Shrubby climber; soft pale blue fls; 1-2 ft; S. Rhodesia.....**ACRO-1** 25¢t

ACTAEA (ak-TEE-ah)

Baneberry, Cohosh. The showy terminal flowers develop into pretty white berries; they are useful in the rock garden, border or wild garden, doing best in shady places. Sow seed in late fall or spring; herbaceous perennials.

arguta. Very hardy, red berries, 2 ft, HP.....**ACTA-2** 20¢

ACTINOMERIS (ak-ti-NOM-er-is)

Tall Sunflower-like native perennials for the hardy border or wild garden and resembling Helianthus and Verbena. Grow like Sunflowers.

—**alternifolia.** Fls. yellow; 1-2" ac; rays; 8 ft; HP.....**ACTI-1** 20¢

ADENOCARPUS (ad-ee-no-CAR-pus)

—**decordicans.**.....**ADEK-1** 30¢

Grown in the GH in N or in open in the S; low shrubs from S. EU and Asia Minor.

ADENOPHORA (ad-e-NOF-o-rah)

Lady Bells. Erect perennials with fleshy roots, flowers in shades of violet. They are good in border, being grown like Campanulas; disturb as little as possible.

confusa. Erect, fls deep blue, 1" long; 3 ft, HP.....**ADEN-2** 20¢

ADONIS (ah-DOH-nis)

Hardy herbaceous annuals and perennials; some make good RG plant and grow well in both sun or shade; fls solitary terminal, crimson or scarlet with a dark colored base. Sow seed of all kinds either in the spring or fall; they are easily grown.

—**aestivallis.** Summer Adonis. Scarlet flowers in June-July, 1½ ft; HP.....**ADON-1** 15¢

AGAPANTHUS (ag-ah-PANTH-us) Lily-of-the-Nile

Blue Lily of the Nile. Beautiful So. African bulbous plant, easily grown. Not hardy and in the North the bulb must be stored indoors during winter. They make ideal tub plants and last for years.

longispatus. A new sp., fls on 4 ft stems; free fl; compact.....**AGAP-5** 25¢

orientalis. Large heads blue fls; 4 ft; S. Cal; HHP.....**AGAP-2** 20¢

—**Agapanthus Blend.** All species listed.....**AGAP-X** 20¢

—**Africanus, Mixed.** Lily of the Nile.....3 ft, mixed varieties; TP.....**AGAP-1X** 30¢

AGERATUM (ager-A-tum)

Herbaceous annuals having tassel-like clustered heads; blue or white; they are easily grown, are tender in the N and must not be set outdoors till all frost danger is passed. They are useful as edging, in the front border, in porch or hanging baskets; popular.

Houstonium: This is incorrectly listed as *A. mexicanum*. The commonly grown

Ageratums all come under this species.

—**Blue Ball.** Deep blue ball-shape plant; compact; 9"; HHA.....**AGER-3B** 15¢

—**Blue Bedder.** Lavender-blue; compact, 4"; pretty for beds; HHA.....**AGER-3C** 15¢

—**Blue Cap.** Rich blue, dome-shape plant; RG; extra nice; HHA.....**AGER-3D** 20¢

—**Blue Star.** Deep blue, 6", very nice for edging; HHA.....**AGER-3E** 15¢

—**Dwarf Imperial, White.** Popular bedding sort; strong growth.....**AGER-3RW** 15¢

—**Blue.**.....**AGER-3RB** 15¢

—**Fairy Pink.** Softest salmon-pink; edging or pots, 6"; HA.....**AGER-3Y** 20¢

—**King of the Blues.** Low compact plants; deep blue; HHA.....**AGER-3F** 15¢

—**Little Dorrit.** Pretty deep blue; fine for edging and pots; HHA.....**AGER-3G** 15¢

—**White.** A pure white strain; fine bedding, boxes and border.....**AGER-3GW** 15¢

—**Midget Blue.** A 2-3 in. plant; compact; fine for edging; HHA.....**AGER-3H** 15¢

—**Purple Perfection.** Deepest blue, 9"; fine for boxes or bedding;.....**AGER-3J** 15¢

—**Silver Star.** Pretty dwarf white, 6 inches, HHA.....**AGER-3K** 20¢

—**Swanley Blue.** Azure-blue; thickly bunched, 8"; HHA.....**AGER-3L** 15¢

(Seed list continued on next page)

PIONEER SEED COMPANY — DIMONDALE MICHIGAN



RECOMMENDED GARDEN BOOKS

ROCK GARDENS. HOW TO PLAN AND PLANT THEM, WITH SECTIONS OF THE WALL, PAVED, MARSH, AND WATER GARDEN. 320 pp. 8 plates in color, 50 photographs and diagrams, lists of plants. Cr. 8vo, cloth. London (1949). Price \$3.25.

Mr. Edwards was formerly in charge of the rock garden at Kew, England. This is about the best book available on rock gardens, in print at the present time.

THE A. B. C. OF THE GREENHOUSE.

Shewell-Cooper (W. E.) 320 pp. 4 col. plates, 9 gravure plates, 27 line illus. 12mo, cloth. London (1949). Price \$1.50.

Lists and gives cultural information on nearly 300 greenhouse plants. A quick and easy reference book. (Very popular)

POPULAR ORCHID GROWING The Royal Orchid Grower. 76 pp. plates (5 in color), diags., tables. 12mo. St Albans, 1949. Paper bound edition with colorful dust wrapper. A handy guide for the amateur. Price \$1.75.

HOW TO INCREASE PLANTS. Hottes (A. C.) 279 pp. 128 illus., lists, tables 12mo. cloth, New York (1949). Price \$3.00.

This is an excellent book. Covers all types of propagation, from seed, cuttings, layers, grafting, etc.

SECRETS OF SUCCESSFUL PROPAGATION. Methods old new. Longmire (A.A.) 135 pp. of text, 84 pages of plates, with a total of 307 individual illus. 12mo. stiff paper, Carpinteria, Cal, 1949. Price \$3.00.

As the name indicates, this book gives some interesting and unusual information about quite a large number of plants. How to raise evergreens from seed; how to shorten time to period of bloom when raising gladioli and other bulbous plants, etc., from seed.

RHODODENDRONS FOR EVERYONE.

Kingdon-Ward. 122 pp., illus. 12mo, cloth. London, 1926. Price \$1.00.

Tells about raising Rhododendrons from seed, among many other things of interest in the culture of this beautiful plant.

THE BOOK OF PERENNIALS.

Hottes (A. C.) 272 pp., illus. tables, lists. 12mo, cloth. New York, 1948. Price \$2.50.

A good American book on perennials.

COLOR ALL THE YEAR IN MY GARDEN

Middleton (C. H.) 123 pp, 24 pp plates (8 in color) lists. Cr. 8vo, cloth, London, n. d. Price \$1.75.

A selection of choice varieties of annuals, biennials, perennials, bulbs, climbers and trees and shrubs — that give a continuity of color in the garden throughout the year.

THE PROPAGATION OF ALPINES.

Hills (L. D.) 464 pp., 43 illus. from photographs. Co. frontis. 93 figs. in text, 8mo, cloth, London (1950). Price \$5.00.

A very complete coverage of nearly 2,500 species.

SEED AND POTTING COMPOSTS.

By W. J. C. Lawrence and J. Newell. rev 4th edition, 160 pp., illus. 12mo, cloth, London. (OUT IN JAN.) Price \$1.75.

The authors are the developers of the (Continued on page five.)

OVER 5,000 KINDS OF SEEDS

AGERATUM continued from page 3.

—White Queen. Pure white; 8"; dandy; HHA.....AGER-3M 15¢
—White Beauty. Considered the best white; 7 inches; HHA.....AGER-3P 15¢
—Zuriblau. Pretty dwarf blue novelty from Switzerland; HHA.....AGER-3Z 15¢
—Mixed. Blend of all the above garden varieties.....AGER-X 10¢

AGRIMONIA (ag-rim-MOH-nee-ah) Agrimony

Erect perennial plants with small yellow fls in racemes followed by burr fruits; shade.
—odorata. Yellow; 3 feet; Europe; HP.....AGRI-2. 20¢

AGROSTEMMA: see Lychinis.

AGROSTIS (ah-GROS-tis)

A group of tufted annual and perennial ornamental grasses.

—nebulosa. Cloud Grass. Dwarf and neat; plant indoors early; 1 ft. HA.....AGRO-5. 20¢

ALLAMANDA (al-ah-MAM-dah)

Shrubs and climbers native of Brazil. Easily grown in the greenhouse in N. In the South they thrive in the open. Showy purple or yellow flowers.

—cathartica. Pretty vine; golden yellow fls 3" across; HHA.....ALLA-1 20¢

ALLIUM (AL-i-um)

Flowering Onion. Nearly all those listed here are hardy perennials. They are attractive plants in the border, some in the rock garden. Sow seeds as for perennials, usually in early spring. Rich, sandy soils best; full sun.

—albopilosum. Lilac in umbels 8 inches across; 3 ft; dandy, HP.....ALUM-2. 25¢
—ammophilum. Golden yellow flowers; Europe; HP.....ALUM-4. 30¢
—cernuum. Nodding buds, erect fls; lavender to white, May, 1 ft; HP.....ALUM-21. 20¢
—falcifolium. An extra good RG variety; 4"; deep rose.....ALUM-28 25¢
—Gayeri. A very pretty 14" plant; rose-pink fls; HP.....ALUM-37 25¢
—karataviense. Whitish fls with purple mid-rib; 1 ft; HP.....ALUM-44 25¢
—neopolitanum. Large 3 inch white flowers; 1 ft; S EU; HP.....ALUM-58. 25¢
—oreophilum. Purple in many flowered umbels; Caucasus.....ALUM-67. 40¢
—nigrum. (A. speciosum) Violet fls; 2 ft; HP.....ALUM-60. 30¢
—peninsulare. Rose-purple fls in loose umbels; 1 ft; HP.....ALUM-72 25¢
—praecox. White fls petals, bright purple mid-vein; 12"; HP.....ALUM-74. 15¢
—pyrenaicum. White flowers with a green mid-rib; 3 ft; HP.....ALUM-78 20¢
—roseum. Rose flowers in loose umbels; 1½ ft; HP.....ALUM-81 20¢
—rubrum. Flowers replaced by reddish bulbels; 1 ft; Rocky Mts; HP.....ALUM-83. 30¢
—Schoenopaeum v. sibiricum. Chives. Rich purple fls; 1 ft; HP.....ALUM-875 20¢
—senescens. (A. montanum).....Lilac in many fl'd umbels; 2 ft Eu; HP.....ALUM-90. 25¢
—stipitatum.....ALUM-96. 30¢
—sulchellum.....ALUM-75. 40¢
—tanguticum. Bluish lilac with darker midrib, in dense umbels; HP.....ALUM-99. 30¢
—tibeticum. Deep blue flowers; 6"; Tibet; HP.....ALUM-102 35¢
—triquetrum. Large white fls in loose umbels, 1½ ft; HP.....ALUM-104. 25¢
—tuberosum. Leaves not hollow; July-Sept; 18"; HP.....ALUM-105 20¢
—unifolium. Pink Allium. Calif. 1-1½ ft; bright rose; HP.....ALUM-106. 20¢
Allium Blend. This is valuable collection of Alliums; nearly 50 sp.....ALUM-X 15¢

ALOE (AL-oh)

Perennial succulent plants native of the Cape. They make ornamental pot plants in the North. Grow in sandy soil with a little peat and rotted manure and small chunks of old mortar or lime; keep on dry side.

—excelsia. From So. Rhodesia.....ALOE-24. 20¢

ALONSOA (al-on-SOH-ah)

Mask Flower. Easily grown in a warm locaion. Sow seed indoors in spring and set plants out after frost danger; for growing indoors in winter, sow in summer and set plants indoors early in the fall.

—Warscewiczii. Cinnabar or scarlet-red; 3 ft; Peru; grow as an annual.....ALON-7. 20¢

Alonsoa Blend. All the above kinds.....ALON-X 15¢

ALSTROEMERIA (al-stre-MEE-ri-ah)

So. American greenhouse plants grown from tuberous roots that are treated as bulbs. Rich soil and a sunny position needed. Seed can be planted in pots, August or later, which bloom the following summer.

—aurantiaca. Orange spotted red, free, very hardy, 3 ft; HP.....ALST-1. 20¢

—augustifolia. Pink, orange or flame, 3 ft; HP.....ALST-1A. 20¢

—Ligtu. Pink, red and yellow fls; 2 ft; HP.....ALST-5 20¢

—hybrids. Peruvian Lily. Pink, red or yellow; 2-3 ft; HHP.....ALST-5H. 20¢

—Pelegrina. Lily of the Incas. Pink spotted purple; 1 ft; HP.....ALST-6 25¢

—alba. Pure white form; very nice; 1 ft; HP.....ALST-6W 25¢

—Blend. All kinds mixed.....ALST-X. 20¢

ALTHAEA (al-THEE-ah)

Hollyhock. Flowers in terminal erect racemes or spikes; easily grown in good loam. Mostly perennial; the biennials, of which the common Hollyhock is the principal one can be started in July for flowers the following summer.

—ficifolia. Fig-leaf Hollyhock. Deep yellow fls; 6 ft; HP.....ALTH-3 20¢

—hybrids. Many collar combinations, 6 ft; HB.....ALTH-3H. 20¢

—rosea. The common Hollyhock, which see.

ALYSSUM (ah-LIS-um)

Magwort. Annuals and perennials, trailing to 1 ft in height, and all showy; the perennials bloom very early in the spring; the annuals during early summer.

—maritimum. Under this heading are listed all the common annual Sweet Alyssum. Botanically, they belong under Lobularia maritima. They are all hardy annuals, doing best when started early. They are used in edging or bedding, in pots, baskets or boxes as well as in the rock garden. All low growing and very free flowering.

—Carpet of Snow. Compact strain, pure white; 3"; HA.....ALYS-15C. 15¢

—Snow Cloth. Very dwarf, compact, snow white; 3"; HA.....ALYS-15S. 15¢

—Little Gem. Compact 6" plants, pure white; HA.....ALYS-15G. 10¢

—Lilac Queen. Deep violet, 6", very pretty; HA.....ALYS-15Q. 15¢

—Violet Queen. Uniformly deep violet, compact, fragrant, 6", HA.....ALYS-15V. 15¢

—Sweet Maritimum. Very fragrant; 1 ft, white; boxes or baskets; HA.....ALYS-15M. 15¢

—Mixed Annual Alyssum. All varieties.....ALYS-15X. 10¢

—idaeum. Silvery green fol; fls. whiteish; Crete; HP.....ALYS-12 25¢

—orientale. Collected in Albania.....ALYS-22. 30¢

—spinosum. White or pinkish; woody; 1 ft; S EU; HP.....ALYS-31. 20¢

—lutescens. Yellow form of Lobularia maritima.....ALYS-16. 25¢

Seed list continued on page five.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

The Purple Dragon

By D. Todd Gresham

Dracunculus vulgaris, 'The Purple Dragon' is not a prim, posy plant, rather it is a plant strong in design, color, and odor.

Huge apple green, maroon lined spathe encircles a protruding black purple spadix, the whole covered by a hazy blue bloom. Exotic fingered tropical foliage offsets the blossom.

For a color kick, plant where the lowering rays of the setting sun light the inner spathe to a rich, sombre ruby glow. In favored climate a club of showy berries, in successive stages of ripening, green to bright orange-scarlet, brighten the landscape.

Hardy on Long Island, if planted ten to twelve inches, and mulched. Plant in full sun.

Seed germinate readily, forming small tubers the first season. In cold climates these should be grown in pots or flats the first two years, allowing them to go dormant in the fall, and starting into growth in early spring.

Plant tubers in permanent location the third or treat as a pot plant.

A Transplanting Tool

Pricking out tiny seedlings from the seed bed requires a steady and trained hand and here is a little tool that can be easily made and does the work to perfection.

Heat an ordinary steel pen point, to red heat and then press the point down on some hard surface, in the same position as if you were going to write, thus bending the point upwards and the two sharp points apart, somewhat like pitchfork in appearance.

At the other end of the pen holder drive a strong needle into it, leaving the head projecting about an inch.

With the needle the little seedlings can be loosened in the seed flat and then with the pen-point end they can be lifted up and transferred to their new position.

Books of the Month.

Continued from page four.
standardized John Innis composts. Their book shows how these remarkable composts save time, reduces the hazards of raising difficult plants from seed, and simplify proper potting on of seedlings or cuttings to maturity. Complete formulas and methods of preparation given.

WILD FLOWERS OF THE CAPE OF GOOD HOPE. Contains 250 full page plates depicting 475 examples of the native flora drawn in water color and reproduced by the three-color process. It lists members of the most characteristic families from the section within a radius of 100 miles of Cape Town. Sponsored by the Botanical Society of S. Africa. Now being printed. Cloth subscription price around \$5.00 duty and postage extra.

FLORA OF THE CAPE PENINSULA. Required 15 years to prepare, the great work of 12 botanists associated with the University of Cape Town, the S. African Museum and the National Botanic Garden. Contains descriptions of all the flowering plants and ferns, over 2600 in number, that grow in the Cape Peninsula. The descriptions are written in as non-technical language as possible and contains simple keys of the families, the genera and for species of each genus. Over 900 pages. \$6.50, duty extra. Orders can be placed for either of these 2 S. African books for delivery as soon as published.

And just think how we criticized the government for giving away garden seeds.

RARE FLOWER SEEDS SPECIALTY

ALLYSUM. Continued from page 4.

montana. Trailing, deep yellow; 3"; RG; HP.....ALYS-20. 20¢
saxatile v. Gold Dust. Spring flowering; 1'; golden yellow; HP.....ALYS-26G. 15¢
—*compastum*. Compact masses, yellow, April-May, 1 ft; HP.....ALYS-26C. 20¢
—*Silver Queen*. Primrose fls; fine for RG; 1 ft; HP.....ALYS-26S. 20¢
—*sulphureum*. Pretty sulphur-yellow; 1 ft, HP.....ALYS-26U. 20¢
Rock Garden Specie. Contains a collection for RG; extra choice; HP.....ALYS-34X. 20¢

AMARYLLIS (am-ah-RIL-is)

One species, *A. Belladonna*, of which there are several varieties or forms. Just lately the botanical name has been changed to *Brunsvigia rosea*. The usual time for fresh seed is April to June and should be sown as fresh as possible.

—*Mammoth Red*. California grown.....AMAL-1. 25¢
—*Mammoth Red and White*. Red flowers with some whites also.....AMAL-1W. 25¢

AMARANTHUS (am-ah-RAN-thus)

Amaranth. Annuals native in mild climates and grown for their colored foliage and the heavy red flowers; they are easily grown and will produce better flowers if grown in poor soil; for that dry bank, these should be fine; full sun.

—*caudatus*. Love-lies-bleeding. Long drooping red fls; 4 ft; HA.....AMAR-1. 10¢
—*oeschberg*. Erect, dark red flowers; HA.....AMAR-1B. 15¢
—*viridia*. Same but with white fls; HA.....AMAR-1W. 15¢
—*nanus*. A dwarf form, HA.....AMAR-1N. 15¢
hybridus hypochondriacus. Prince's Feather. Showy; red; 3 ft; HA.....AMAR-2H. 20¢
Molten Fire. Maroon fol each branch tipped fiery crimson; 4 ft; HA.....AMAR-4F. 15¢
Pigmy Torch. Dark crimson, low plants; 1 ft; HA.....AMAR-2F. 15¢
—*salicifolius*. Fountain Plant. Slender leaves, 3 ft; HA.....AMAR-4S. 15¢
—*Sunrise*. Bronze crimson and scarlet, 3 ft HA.....AMAR-4R. 15¢
—*splendens*. A rich red with brilliant light red fol at top plant.....AMAR-4S. 15¢
Amaranthus Blend. All kinds mixed; HA.....AMAR-X. 10¢

AMBERBOA (am-bur-BOH-ah)

Annuals with jaggedly cut or divided leaves and flower heads in purple, blue or pink resembling Bachelor Buttons. Easily grown from seed and should be planted where plants are to grow; half hardy annuals native of Spain and Morocco.

—*muricata*. Easy; stars of pale purple with creamy centers; HHA.....AMBR-2. 20¢

AMMOBIUM (a-MOH-bi-um)

Australian everlasting, perennial, with solitary heads of yellow fls surrounded by silvery-white bracts. Easy to grow, usually as an annual but can be planted in the fall. Flowers remain white if cut early.

—*alatum*. Winged Everlasting. Foliage white-woolly, 3 ft, heads 2" ac.....AMOB-1. 15¢

AMPELOPSIS (am-pe-LOP-sis)

Tendrill-climbing deciduous shrubs belonging to the Grape Family. Grows well in any fair soil; some not hardy in the North.

—*quinquefolia*. Virginia Creeper, American Ivy. (Parthenocissus).....AMPL-13. 20¢
—*Veitchii*. Boston Ivy. (Parthenocissus).....AMPL-12. 20¢

AMSONIA (am-SOH-ne-ah)

Perennials 1-3 ft tall, having bluish flowers followed by rather attractive milkweed-like pods; border, easily grown.

—*Tabernaemontana*. Star fls of soft blue; May-June; HHP.....AMON-2. 15¢

ANACYCLUS (an-ass-SYE-klus)

A race of daisies from Med. regions related to *Pyrethrum*; a few species are very desirable dwarf perennials with finely cut foliage and large white or yellow daisy-like flowers with backs of the rays striped with brilliant red. Sunny, stoney positions best.

—*Anacyclus Blend*. All kinds mixed; HP.....ANCH-X. 15¢

ANAGALLIS (an-ah-GAL-is) Pimpernel

Low growing annuals, biennials and perennials having pretty little star-like flowers in red, blue and white that grow out of the axils of the leaves on hair-like stems. Very free flowering; some especially nice for the rock garden. Best in a loose warm soil.

—*linifolia*. Mixed. Large flowered.....ANAG-2X. 20¢
—*Scarlet*.....ANAG-2S. 20¢

ANAPHALIS (an-NAF-al-iss)

White woolly perennials for the rock garden or border; small white flowers and can be used as everlastings.

—*margaritacea*. Pearl Everlasting. Fine for dry fls; white; 3 ft; HP.....ANAP-1. 20¢
—*nubigena*. Himalayan alpine for RG dwarf woolly; white fls; HP.....ANAP-4. 25¢

ANCHUSA (an-KEU-suh)

Excellent perennials for the summer border in a sunny place; hardy, easily grown, flowering July-August or even later. Comes mainly in blue colors. Best in good soil with plenty of old manure. Be careful not to damage tap root when transplanting.

—*azurea*. *Dropmore Variety*. Lovely bright blue fls; 4 ft; HP.....ANCH-2D. 15¢
—*Opal*. Same as above but a lighter pretty blue; HP.....ANCH-2P. 15¢
—*capensis*. *Blue Bird*. Vivid indigo-blue, compact, 1½ ft, HA.....ANCH-4B. 15¢
Anchusa Blend. All kinds and varieties; HP.....ANCH-X. 15¢

ANDROSACE (an-DROS-ah-see)

Rock Jasmine. True alpine annuals and perennials for the rock garden or low border. Many require special handling in the alpine or rock garden. Leaves usually tufted or in rosettes and often woolly. Flowers small in red, pink or lavender, usually borne in rather flattened rounded clusters. Requires a dry gritty, well drained soil but not too suffer from drought. Seed may remain in the soil over a year.

—*cylindrica*. Tight cushions; 1" tall; choice alpine; HP.....ANDR-6. 50¢
—*Hookeri*. Pretty little plant, brilliant pink, 2", HP.....ANDR-10. 25¢
—*sarmentosa chumbyi*. Easy RG plant; mats of small rose fls; 3"; HP.....ANDR-18C. 25¢
—*sempervivoides*. Fine RG plant; umbels of pink fls; 3"; HP.....ANDR-19. 25¢
—*septentrionalis subumbellata*. Sprays of small white fls; 5"; HB.....ANDR-20S. 25¢
—*yunnanensis*.....ANDR-23. 30¢

ANEMONE (ah-NEM-oh-nee)

Attractive perennials blooming in the spring, summer or autumn; fls come white, rose, red and purplish. They thrive in a rich sandy loam, many in shade; they make beautiful plants in the border and some in the RG. The florist species are *A. coronaria*, *fulgens* and *hortensis*. These come in single and double fls and are grown mostly as fall or winter flowers. and grown much as are freesias; these are not real hardy.

CORONARIA. Poppy-flowered Anemone. This is the popular florist Anemone.
—*Cain*. Single giant flowered strain, French.....ANEM-10C. 20¢

Seed list continued on page six

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Plant Names

Many of the botanical name given plants may seem very confusing to some growers but they are not as bad as they at first may seem. Following are a few names and their meanings. Knowing these will make your flowers more interesting.

When plants have the word *himalaicus*, *caucasicus*, *sibericus*, *alpinus* or *montanus*, you will know they are at home in places of high altitude and require perfect drainage.

Plants whose names suggest that they are at home in severe winter climates are known by such names as *canadensis*, *sibericus* or *arcticus*.

Chilensis or *mexicanus* suggests warm places and so would very likely be planted in a sheltered place.

Javanicus or *madagascarensis* are names of plants subject to tropical conditions and here in the U. S. would be planted in the greenhouse.

For pond-side or swampy places, such plants often have such words as *aquaticus*, *paludosus* or *lacustris*.

Fuchsia is named after the German physician who published his 'History of Plants' in 1542.

Lonicera, to which the Honeysuckle belongs, was named after Adam Locicer of Frankfort and who died in 1586.

Sedum is from *sedeo*, to sit, because it sits on rocks and walls. Is also called *Stonecrop*, because it grows on stones.

Gypsophila means loving chalk. It grows best in alkaline soils.

Philodendron means loving a tree.

Ranunculus means little frog and suggests it loves marshy places.

Heath, *Heather* is from the German word meaning waste, because it grows on waste ground. The dwellers on the heaths being the last to accept Christianity, hence 'heathen'.

Vermiculite for Seeding

By W. A. Hendrych

I have used Vermiculite as a seeding medium with the highest degree of success. Early this spring I started quite a number of flats filling with Vermiculite, then completely soaking them down. I left the flats drain for half an hour and then seeded as I would have, if using soil, only increasing the amount of covering of the seed to about five times their thickness instead of the customary three.

I did not have to water them again until germination as the greenhouse is quite humid and Vermiculite holds water exceptionally well.

The root systems on the plants were almost twice as heavy as those rooted in soil.

This method was successful with practically no damp-off on the following plants: pansies, cinerarias, primulas, ageratum, asters, salvias, bellis, dahlias and others.

All the seedlings were transplanted to soil after the second set of leaves were formed; this is not absolutely necessary if you are able to use nutrients, watering at an average of once a week with a dilute solution.

Cuttings are also farther advanced by rooting them in Vermiculite. I find I am able to pot a cutting in one half the time it would take in sand or soil as a medium.

(Mr. Hendrych is Chief Gardener at the U. S. Naval Ordnance Plant at Forest Park, Ill.

THE MOST COMPLETE SEED LIST

ANEMONE continued from page 5.

—Creagh Castle Strain. Famous English strain.....	ANEM-10CC. 25¢
—Monarch. A new strain in best colors.....	ANEM-10M. 20¢
—Single Giants. Large flowered strain in man colors.....	ANEM-10N. 20¢
—Hollandia. Very pretty red with dark centers.....	ANEM-10H. 20¢
—St. Brigid. True Irish strain, double brilliant fls, not hardy N of D.C.....	ANEM-10S. 25¢
—Mr. Fokker. Beautiful single bright blue.....	ANEM-10SF. 30¢
—His Excellency. Pretty scarlet flowers.....	ANEM-10SE. 25¢
—The Governor. Double bright scarlet flowers.....	ANEM-10SG. 25¢
—Mixed. All the A. coronaria varieties blended.....	ANEM-10X. 15¢

alpina. Cream inside, purplish out; 3" across; 1½ ft; HP.....	ANEM-3. 25¢
biflora.....	ANEM-8. 20¢
barbulata.	ANEM-7. 30¢
cylindrica. Candle A. Greenish white clusters; 2 ft. HP.....	ANEM-11. 25¢
demissa. White fls purplish outside, in clusters; Aug-Sept; 1 ft; HP.....	ANEM-16. 15¢
Drummondii. Fls cream, blue outside; June-July; moist soil; RG, 6", HP.....	ANEM-17. 25¢
globosa. Fls red to bronze-green; May-Sept; 18"; HP.....	ANEM-19. 20¢
Halleri. For sunny places, lilac fls; June; RG; 6", HP.....	ANEM-20. 25¢
Hybrida japonica. Autumn flowering hyb's white tinged rose, 3 ft; HHP.....	ANEM-21. 20¢
magellanica.....	ANEM-32. 20¢
—Giant Form.	ANEM-32G. 20¢
Lesseri.....	ANEM-28. 4¢
montana. Dark violet, drooping fls; 6"; HP.....	ANEM-34. 20¢
multifida.....	ANEM-35. 35¢
myosoidiflora. see Brunnera macrophylla.	
nericans. Purple-black fls; Pulsatilla Group; 1 ft; HP.....	ANEM-38. 20¢
occidentalis. White or purplish fls, 2" across; May; 1½ ft; HP.....	ANEM-39. 20¢
patens nuttalliana. Purple fls very early in spring; 8"; HP.....	ANEM-44N. 20¢
Pulsatilla. Violet fls; April; likes lime, fine spring fls; 1 ft, HP.....	ANEM-46. 15¢
—ameena.....	ANEM-46E. 20¢
—alba. A beautiful creamy white form; 8" HP.....	ANEM-46A. 15¢
—australis.....	ANEM-46T. 20¢
—Gayeri.....	ANEM-46G. 20¢
—Mallenderi.....	ANEM-46L. 20¢
—montana. Dark violet drooping flowers.....	ANEM-46M. 25¢
—patens. Flowers purplish, 2½" across.....	ANEM-46P. 25¢
—seerolina.....	ANEM-46S. 20¢
slavica. Collected in Austria.....	ANEM-54. 20¢
rivularis. White tinged blue; 1½" across; 3 ft; India.....	ANEM-51. 25¢
—sulphurea. A yellow variety.....	ANEM-35. 35¢
sylvestris. Pure white, fragrant, nodding fls; May-June; 1½ ft, HP.....	ANEM-56. 20¢
virginiana.....	ANEM-60. 20¢
vitifolia. Grape-leaf A., fls white, 2" ac. in cymes, July; HP.....	ANEM-61. 30¢

ANODA LAVATEROIDES

hasta. Handsome plant; lovely pink fls 10 ft; HA.....	ANOD-2. 20¢
Opelcup. Continuous bloomer; June-Nov; fls, blue and pink; 3 ft HA.....	ANOD-4. 15¢
—Snowcup. Shining snow-white; 30"; profuse bloomer, HA.....	ANOD-4S. 20¢

ANTENNARIA (an-te-NAY-ri-ah)

Everlasting; Pussy's Toes. Perennials used in the wild or rock garden, also much used as dried flowers in winter bouquets. Best in dry soil, easily grown. Flowers in heads and the leaves are white-woolly clustered at the base.

aprica. Dense low mats, white or pink heads, 5"; HP.....	ANTA-2. 25¢
rosea. Foliage distinctly white and woolly; fls rose; 1½ ft; HP.....	ANTA-17. 25¢

ANTHEMIS (AN-the-mis)

AN-the-mis) Golden Marguerite, Chamomile. Very free flowering perennials with daisy-like flowers, blooms June-Sept. Does well on dry sandy soils and in full sun. Sow seeds in late April or early May, outdoors, or they can be started earlier indoors. Thin plants in garden to 10" apart. Profuse bloomers.

—arabica.....	ANTH-3. 25¢
Kelwayi. Pure golden yellow; July-frost; 2½ ft; HP.....	ANTH-6. 10¢
montana. Charming sp, pure white fls 1 ft; HP.....	ANTH-9. 15¢
nobilis, Perry's Variety. Bright lemon form; fine cut fl; 2 ft; HP.....	ANTH-10P. 20¢
—simplex. Large flowers.....	ANTH-10S. 15¢
Sancti-Johannis. Deep orange fls, 2" heads; 3 ft; HP.....	ANTH-13. 15¢
tinctoria. Golden yellow ray fls; fine for cutting; 2½ ft; HP.....	ANTH-14. 10¢
—Anthemis Blend. All kinds.....	ANTH-X. 15¢

ANTHERICUM (an-THER-i-kum)

Tuberous-rooted herbs of the Lily Family having racemes of small white lily-like flowers and long narrow grassy leaves. Common names are St. Bernard's Lily, ST. Bruno's Lily. In the North they require protection. They make fine GH plants or for use in lawn vases in the summer. Require plentiful supply of water when blooming.

liliago. Neat species, small white fls; 18"; HP.....	ANTE-3. 25¢
ramosum. Tufts of grass-like foliage; white flowers; RG; 2 ft, HP.....	ANTE-4. 25¢
undulatum. White fls in racemes, easy; native S. Af.; 1 ft; HHP.....	ANTE-5. 25¢

ANTIGONON (an-TIG-oh-non)

A tendrill climber grown in the North as a GH vine but in the South it is a popular hardy climber where it has a long blooming season. In the GH it requires plenty of light and not too much root room. Keep roots dry during rest in winter.

leptopus. Climber to 40 ft; rose-pink fls; Mexico, tender.....	ANTI-1. 15¢
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ANTIRRHINUM (an-ti-RY-num)

Snapdragons are popular cut flowers both in the garden and the GH. Early flowers can be had by starting them indoors in Feb. or later on till April. They are tender perennials but grown as annuals. The seed being small, care should be used in germinating them, they may be slow. A majus is the commonly grown species. Set out after danger of frost is past. For winter bloom sow in August and get seedlings into pots as soon as possible. Pinch off terminal but whenever transplanting.

ALL RUST RESISTENT STRAINS.

MAGUS GRANDIFLORUM: Tall large flowered, making excellent garden cut fls.

—Firefly. Crimson and yellow, popular.....	ANTR-1F. 15¢
—Primrose Queen. Very large flowers in a soft primrose.....	ANTR-1Q. 15¢
—Prince of Orange. A popular orange color, excellent for cutting.....	ANTR-1P. 15¢
—Queen Victoria. The best pure white; necessary in all plantings.....	ANTR-1V. 15¢
—The Sentinel. Bright orange-scarlet with a white throat.....	ANTR-1S. 15¢

Seed list continued on page seven.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

SEEDS COLLECTED WORLDWIDE

ANTIRRHINUM (Snapdragon) Continued from page 6.

—Vulcan. A very bright crimson-scarlet with a dark foliage	ANTR-1L	15¢
—Yellow King. Pure rich yellow	ANTR-1K	15¢
—Blend of the above colors	ANTR-1X	15¢
MAXIMUM: Tall giant flowered spikes; extra for the good grower.		
—Appleblossum. A soft rose suffused with yellow	ANTR-2A	20¢
—Canary Bird. A pure soft canary yellow	ANTR-2B	20¢
—Cattleya. A soft silvery rose-lilac with a golden yellow tip	ANTR-2C	20¢
—Copper King. Coppery scarlet turning into a pure copper color	ANTR-2K	20¢
—Old Gold. A beautiful old gold blend that makes it ideal for cutting	ANTR-2G	20¢
—Purple King. A velvety dark garnet color	ANTR-2P	20¢
—Snowflake. A very lovely pure white that stands up good	ANTR-2W	20¢
—The Rose. One of the most popular deep pinks that holds its color	ANTR-2R	20¢
—Blend of majus grandiflorum varieties	ANTR-2X	20¢

MAJUS NANUM: Half dwarf; large flowered; especially good for bedding; stands well.		
—Black Prince. A very dark maroon; the darkest color	ANTR-3B	20¢
—Cottage Maid. A bright pink with a white throat	ANTR-3M	20¢
—Crimson King. The best in the deep crimson colors	ANTR-3C	20¢
—Flame. A brilliant orange-scarlet self	ANTR-3F	20¢
—Golden Queen. A large flowered rich golden yellow	ANTR-3Q	20¢
—Rose Eclipse. A large flowered strain in brilliant light rose	ANTR-3R	20¢
—White Queen. The best of this most important color	ANTR-3W	20¢
—Blend of above colors. A hand made blend with good color range	ANTR-3X	20¢

MAJUS NANUM GRANDIFLORUM: Semi-dwarf plants with giant flower heads; beds.		
—Bonny Lass. A delicate rose color; soft and attractive in beds	ANTR-4B	20¢
—Exquisite. Soft rose with sulphur yellow lip on white ground	ANTR-4E	20¢
—Golden Monarch. Distinct bright golden color; extra large flowers	ANTR-4M	20¢
—Lady Bird. A cerise and white variety, very distinct	ANTR-4L	20¢
—Orange Glow. Salmon-orange, falls paler, very large flower	ANTR-4G	20¢
—St. George. Orange-scarlet a beautiful and striking color	ANTR-4S	20¢
—Blend of above colors. Hand made for a good bedding display	ANTR-4X	20¢

MAJUS NANUM MAJESTIC: All around type; 2-2½ ft; for both bedding and cutting.		
—Avalanche. The best pure white in this strain	ANTR-5A	20¢
—Fire Dragon. Cerise-scarlet with golden center	ANTR-5F	20¢
—Orange King. Rich terra cotta with golden lip merging to deep orange	ANTR-5K	20¢
—Pink Jewell. Has large waved flowers in bright pink	ANTR-5J	20¢
—Rose Beauty. A brilliant pure rose color	ANTR-5Z	20¢
—Rose Marie. Pretty salmon-rose with a golden center	ANTR-5M	20¢
—Sunset. Bright terra cotta shade rosy salmon	ANTR-5S	20¢
—Twilight. Delicate apricot with an old gold center, shaded salmon	ANTR-5T	20¢
—Blend of the Majestics. A hand made blend of above varieties	ANTR-5X	20¢

PUMILUM: Excellent dwarf and compact type ideal for low beds.		
—Amber Queen. Light orange tinged with amber	ANTR-6A	20¢
—Orange Queen. Best orange bedder	ANTR-6Q	20¢
—White Queen. The finest white bedding variety	ANTR-6W	20¢
—Pumilum Blend. Hand made blend of all varieties; full range	ANTR-6X	20¢

FORCING VARIETIES: Best varieties for greenhouse growing and winter flowering.		
—Afterglow. A rich golden bronze color	ANTR-7A	25¢
—Cheviot Maid Supreme. An early flowering bright pink	ANTR-7C	25¢
—Glorious. Bright reddish bronze, 3 ft.	ANTR-7G	25¢
—Lucky Strike. The best pure white variety	ANTR-7W	25¢
—Rose Queen. The best dark pink variety	ANTR-7R	25¢
—Sunlight. A beautiful orange-bronze color	ANTR-7S	25¢
—Suntan. An old reliable orange-bronze	ANTR-7T	25¢
—Yellow Wonder. Improved strain; an extra early pure yellow	ANTR-7Y	25¢
—Greenhouse Blend. This is a carefully made blend of colors	ANTR-7X	25¢

FLORIST NOTE:

Those wishing a larger quantity than the above may order 50¢ packets or 90¢ per one eight ounce.

Rock Garden Hybrids, Magic Carpet. 6" tall in every color combination	ANTR-8	20¢
—Tom Thumb. New European rock garden hybrids	ANTR-8X	20¢

TETRA SNAPDRAGONS: Spikes 1 ft long; strong, husky growth; ideal for greenhouse growing; they are very popular with commercial growers

APHANOSTEPHUS

Annuals or biennials having solitary flower heads with white, violet or purple ray-flowers or golden disks. Easy to grow; fine cut flowers and bloom profusely.

skirrobasia. Lazy Daisy. Pink and white with golden center, 1½ ft, HA	APHN-1	20¢
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AQUILEGIA (ak-wi-LEE-ji-ah)

Columbine. One of the most valuable of hardy perennials. Its foliage is attractive and the pretty spurred flowers cannot be equaled for color. Bloom early in the summer. Sow seeds any time so long as they can be shaded from the hot sun and are established early in the fall. Seed is sometime slow to germinate and early planting is best: they do best in a shaded place in the garden.

LONG SPURRED VARIETIES:

Blue Shades. Finest strain in shades of blue; 3 ft; HP	AQUI-1B	20¢
Copper Shades. A new strain having a straw colored corella; 2½ ft; HP	AQUI-1C	20¢
Dobbe's Hybrids. A choice European strain; 2½ ft; HP	AQUI-1D	20¢
Helena. A mammoth flowered blue variety; 3 ft; HP	AQUI-1H	20¢
Mac's Strain. From one of the best commercial growers; all colors	AQUI-1M	20¢
Crimson Star. Brilliant; crimson sepals and spurs, white petals; HP	AQUI-10C	25¢
Mrs. M. Nichol's Strain. Very choice in nice blue shades; 2½ ft; HP	AQUI-10N	25¢
Mrs. Scott Elliott Strain. Beautiful; extra color combinations; HP	AQUI-10S	25¢
Munstead White. A beautiful white strain; HP	AQUI-1T	25¢
Rose Queen. Select strain of pretty pink shades; 3 ft; HP	AQUI-1Z	20¢
Orange and Scarlet Shades. Very choice; 3 ft; HP	AQUI-1S	20¢
Pink Shades. Choice strain in all shades; HP	AQUI-1P	20¢
Snow Queen. Finest white, long spurrer, fragrant; 3 ft; HP	AQUI-1S	20¢
W-F Hybrids. Unique colors in Columbine extra good; 3 ft; HP	AQUI-1W	20¢
Saier's Long Spurred Blend. Made up of all the very best strains; HP	AQUI-1X	20¢

Columbine Species:

alpina. Very rare RG sp; short spurred; deep blue; 1½ ft HP	AQUI-2	20¢
canadensis. Yellowish or red sepals, red spurs, May-June; 2½ ft; HP	AQUI-11	20¢
chrysantha. Yellow, long spurs; May-Aug; 3 ft; HP	AQUI-12	20¢
clematiflora. Pale pink and blue hybrids; 1½ ft; HP	AQUI-14	25¢
fiabellata. Pretty dwarf sp. pure white, early; 1 ft; HP	AQUI-22	25¢
formosa. Red and yellow; RG sun or shade; 9" HP	AQUI-23	25¢

Seed list continued on page nine.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Association of Plants and Minerals in Nature

In the Dec. 1949 issue of the New York Botanical Garden bulletin, there is an interesting article by Leonard J. Buck on the association of certain plants with certain minerals.

The writer being a mining engineer, he has had an opportunity of observing how some plants, and especially their condition, indicated the presence of certain minerals in quantities in the soil.

For instance a terrestrial orchid, which he believes to be *Epidendrum O'Brienianum*, grew in profusion on one of the well known iron deposits, but did not appear in the surrounding territory. Mining engineers now are trained to observe plant reactions to ore deposits. How many a poor botanist who has over looked rich mines!!

It might be noted here that this reaction is only noticeable in non-glaciated areas because where glaciers have covered the soil, the rocks have been moved great distances and therefore have no relation to the underlying formations. However, even in these sections of the world, evidence of the relationship has been noted where the glacial material is thin.

Mr. Buck gives the following table as indicating the relationship of certain chemicals to certain plants.

Copper:

Caryophyllaceae (The Pink Family).
Mielichhoferia nitida (a moss).
Scopelophila liguta (a moss).
Arenaria verna.
Lychnis alpina and dioica.
Silene (various species)

the above as especially noted in the U. S.

Gold:

Cecropia lactevirens and other species.

Iron:

Epidendrum O'Brienianum.

Iron—Pyrite and Arsenopyrite:

Calamagrostis.

Lead:

Tussilago farfara.

Lead Sulfide:

Amorpha canescens, (U. S.)

Mercury:

Arenaria setacea.

Phosphorus:

Convolvulus althaeoides.

Silver:

Epigonon ovalifolium, U. S.

Tin:

Pluchea Quitoc.

Zinc:

Thlaspi alpestre (Germany).

Various species, (Sweden).

Zinc carbonate:

Thlaspi calamin ore.

Thlaspi rotundifolium.

Aquilegia glandulosa

A delightful Columbine of upright growth and having flowers without spurs, but the contrast of the pure powder blue petals and the white center is of a fascinating effect.

Sow in May under glass and keep in a dark place while germinating, then prick out as soon as they have little size, into flats and keep in a shaded location over the summer. In Sept. transplant into pots, wintering them over in a frost free house. They will then produce flowers the very first thing in the spring.

Bauhinia will flower the first year from seed.

Sphagnum Moss for Seed Germination

Sphagnum may be used in coldframes or in containers with pervious bottoms. In the ordinary flats the moss may constitute the whole filling, but if the supply is limited it may be used as a layer an inch thick over a foundation of soil, sand, or sand and peat, providing the foundation drains reasonably well. Old wooden flats showing evidence of wood-rooting fungi should be rejected, as some of these fungi decompose the sphagnum.

The moss is moistened slightly and the flat is filled level; then the surface is firmed until it is a half inch below the rim of the flat. It is then watered thoroughly and allowed to stand for a few minutes. Since the smooth compact surface is favorable to the growth of green algae, an additional layer of sphagnum one-eighth of an inch thick is applied and given a light sprinkling.

Sowing the Seeds

Seeds are then sown broadcast or in rows. If several varieties are to be broadcast in the same flat, they can be separated by a thin line of dry sand; this does not disturb the sphagnum, as would the insertion of wooden strips or other markers. Usually no covering is given the seed, though a light covering of the larger kinds does no harm. When the seed has been sown, the surface is given a very light sprinkling, a mist from an atomizer is best, and is then covered with a pane of glass. This may rest on a light wooden frame that fits exactly on the rim of the flat and raises the glass an inch. Tacking one of the glass substitutes on these frames is convenient in obviating the weight and awkwardness of glass. Both light-sensitive and light-inhibited seeds have germinated well in the subdued light under translucent glass substitutes. The flats are not exposed to strong sunlight while covered with close-fitting transparent covers. With the frame cover applied, no further attention is needed for 2 or 3 weeks in a greenhouse atmosphere, a period ample for the germination of many seeds. Ordinarily no additional watering is needed during this period, but in a dryer atmosphere it may be required several times before germination. In case of doubt, however, water may be applied, as it does no harm.

When germination is complete the frames are removed. From this time care must be taken against drying out, which may occur before the condition is noticed. Fortunately, however, this is a much simpler matter with sphagnum than with soil, because sphagnum tolerates overwatering and in case of doubt water can and should be applied, whereas with soil excessive watering is as disastrous as insufficient watering.

The acidic reaction (about pH4.3) of the sphagnum might cause some doubt as to the suitability of the material for seeding certain plants. For instance, cacti and succulents are often sown in a compost containing lime sufficient to produce a neutral or even slightly alkaline reaction. Seeds of these plants, however, germinate well in sphagnum and grow for long periods if supplied nutrient solutions occasionally. Addition of lime to the sphagnum has been detrimental rather than advantageous.

Use of nutrient solutions

During the period of hardening following the removal of the pane of glass, fine metal screen or thin cheesecloth in light wooden frames is useful for covering the flats, as it reduces the rapidity of surface drying and protects the seedlings from attacks by rodents

The following article is part of a leaflet of the U. S. Dept. of Agriculture

or roaches.

Although satisfactory plants for early transplanting may be grown without the use of mineral nutriment, somewhat more vigorous growth may be obtained if a mineral nutrient solution is applied to the sphagnum before the seeds are sown or after they have germinated. The composition of the nutrient solutions for use with young seedlings apparently may vary widely, and various solutions have been tried with excellent results. A useful solution may be made by stirring 1 teaspoonful each of potassium nitrate (salt-peter) and superphosphate in a gallon of water and applying a quantity sufficient to saturate the moss. A solution containing 2 teaspoonfuls of a 12-12-6 fertilizer mixture per gallon has often been used at the Plant Introduction Garden. A satisfactory solution may also be made by stirring 5 to 6 teaspoonfuls of one of the less concentrated complete garden fertilizers, as a 4-12-4 or a 5-8-6 mixture, in a gallon of water. The insoluble residue that may be expected with these fertilizers should be discarded. Nutrient solutions applied at intervals promote a steady growth of the seedlings and normally are recommended if the seedlings are to be left in sphagnum beyond the cotyledon stage.

Retention of seedlings in sphagnum

Withholding nutrients from the sphagnum soon checks the growth of the seedlings and keeps them in an arrested state of development without loss or deterioration, in some cases for a long time. Normal growth may be induced at any time by transplanting out of the flat. This is a very great advantage over soil, in which ordinarily the plants cannot be retained without serious difficulties. Seedlings of Cinchona (quinine tree) kept for a year in the seed flat have begun growth in normal condition upon application of a nutrient solution. Extra plants of some species can thus be held back in a seed flat for an indefinite period as a reserve. This feature of germination on sphagnum should be useful also in commercial establishments where space is limited and may not be available at the proper time for transplanting. With many species one sowing can supply a succession of transplants for an entire season. Further experimentation, however, is needed to determine the applicability to various species of plants. Another promising feature of the use of sphagnum is that seeds that are too short-lived for successful storage can be germinated and the seedlings held in a retarded condition until desired.

Control of damping-off

The freedom of seedlings from loss by attacks of damping-off is remarkable if sphagnum is used in accordance with the above instructions. The acid reaction of the sphagnum may be a factor in its control, but it does not explain the results, as severe damping-off has often been found under identical conditions with soil mixtures having the same reaction. The use of sphagnum dispenses with any need for various methods of sterilizing the seedling medium. In no case has chemical treatment of seed for damping-off control been practiced. For the gardener or the small commercial grower this does away with the hazards of indiscriminate use of chemicals. Where needed, however, treatments for seed-borne diseases, as distinguished from damping-off, should be used.

Seedlings of tomato, pepper, petunia, snapdragon, cardinalflower, and scarlet sage were germinated on sphagnum and in soil. Inoculations with damping-off fungi, including several kinds, were made singly on the plots. On sphagnum a very few seedlings were attacked at the points of inoculation, but in no instance did the infection spread. In soil most of the seedlings died. When flats were so prepared that the soil plots adjoined sphagnum plots with no barriers between them, seedlings on sphagnum were uninjured, but on the adjoining soil few escaped.

Transplanting

In many cases seedlings are pricked off from the flats at an early stage, sometimes after only two weeks, but the time for transplanting is not at all critical unless the seedlings are overcrowded. Removal from sphagnum ordinarily causes less disturbance to the root systems than is usual when they are transplanted from soil. The frames covered with wire screen or cheesecloth, often used during the period of hardening-off of seedling, are likewise useful for covering flats into which seedlings have been recently transplanted.

Growing and shipping plants

Excellent growth for an indefinite period has been obtained with plants transplanted in sphagnum and watered occasionally with nutrient solutions. The use of sphagnum is advantageous for growing plants that are to be shipped, because of the light weight of the moss in comparison with soil. It has recently been used extensively for growing plants to be transported by airplane. Plants grown for shipment may be lifted and separated without serious damage to the roots if they have not been standing in sphagnum for an unduly long period. Plants may be grown in pots of sphagnum and knocked out for shipment; the balls of sphagnum do not scatter as do balls of soil.

Plants grown in sphagnum do not appear to have any important disadvantages in comparison with those started in soil when lined out under ordinary garden or nursery conditions in the Temperate Zone. Experiments on several types of soils with a variety of vegetable plants and also several woody ornamentals have shown few differences in growth between the plants grown in sphagnum and those grown in soil prior to lining-out. Care should always be taken to place soil over any sphagnum that may adhere to the roots.

(NOTE: We have a good supply of mill-eds sphagnum made up this year but due to the extremely wet season and the labor shortage, not as much was gotten in as we wished, thus it will be best to order as early as possible. See under supplies on page 16.

Iris pumila

Iris pumila is a dwarf 4-8 inch Iris and it always grows with us to be at least 12 inches high. We have secured plants from many different sources both here and in Europe, and always with the same results, plants that grow a foot or more tall.

I now come to the conclusion that if one really wants an 4-8 inch pumila, it will be necessary to grow it as it is found in its native locations, viz., on dry stoney hills.

Our soil is rich and not in any way like a dry stoney hill. You Iris fans who have been bring to BUY a dwarf pumila had better try them on some poor soil!

Bromeliads

By Victoria Padilla

When Columbus and his men came to America, they discovered not only a continent, but also a plant, the fruit of which was to delight for ever more the palates of all who tasted it. This was the pineapple, which before 1493 was unknown to the civilized world.

The pineapple is just one member of the Bromeliaceae Family, a group of tropical plants to be found (with just one small exception) only in the warmer parts of the Americas. They may be found growing on rocks, living on trees along side of orchids, or deriving their sustenance from mother earth. Some varieties live but a few yards from the ocean, enjoying the salt spray of the waves; others thrive in the humid heat of the jungles; some prefer to cling to the windy sides of high mountains; while others, such as the Spanish Moss, enjoy nothing so well as living on telephone wires.

Bromeliads are utterly fascinating plants, in that their habit of growth and coloration of leaves and flowers are unique in the plant world. Easy to grow, it is indeed surprising that they are not better known in this country. Anyone who can grow begonias or lilies from seed can raise bromeliads, although the easiest means of propagation is by offshoot. Bromeliads, particularly the epiphytic types are well adapted to indoor culture, and their bizarre appearance fits in well with modern decoration.

For the past century, Bromeliads have been favorites of growers on the Continent. The plants are not raised in just a few numbers in a few greenhouses as in this country, but are grown by the thousands in Belgium, France, Germany and Switzerland. One grower in Switzerland raised over 35,000 plants of the highly prized variety, *Aechmea fasciata*. The exquisitely lovely pink and blue flowers of this plant last for months and are favorites of the cutflower market abroad. Yet, in America, probably not one gardener in a hundred has seen or heard of this beautiful plant.

We Americans complain that there are no new frontiers left to explore. For the plant lover, however, those frontiers are still endless, particularly in the realm of the sub-tropics. The Bromeliads, in its many forms, from the minute Spanish moss to the giant agave-like puya, offers an intriguing study to anyone interested in the unusual. There are over 1,600 species belonging to this family, and the plant lover who is looking for something new has some delightful surprises in store for him.

The writer had the pleasure recently to help organize **The Bromeliad Society**, an international organization devoted to the study, culture, and conservation of this great family of plants. That interest in the Bromeliad is growing is evident in the large number of letters that have been received from all parts of the world, requesting information about these plants.

STARTING GLADIOLUS BULBLETS

Place the bulblets in a burlap bag or sack and submerge in water until thoroughly soaked, half to one hour, then remove from the water and after draining for 15 minutes, put the sack containing the bulblets in a box of damp peat, saw dust or milled sphagnum, cover and leave till growth starts, when they should be planted into the field.

PLANT ASTERS FOR CUTTING

AQUILEGIA (Columbine) Continued from page 7.

Jaeshkanii.....	AQUI-12J	25¢	
—Silver Queen. Abeautiful white strain; HP.....	AQUI-12S	25¢	
glandulosa. True alpine, powder blue and white fls; RG; 8"; HP.....	AQUI-24	25¢	
—longissima. Lovely pale yellow fls; very long spurs; 3 ft HP.....	AQUI-32	25¢	
Hensol Harebell. A vivid deep violet blue; 1½ ft; HP.....	AQUI-26	25¢	
pyrenaica. Dwarf deep blue; 6"; HP.....	AQUI-38	25¢	
Skinneri. Crimson red with greenish yellow sepals; spurs pale red HP.....	AQUI-42	25¢	
Torkington's Double.....	Pretty double fls; will show few singles; 2½ ft HP	AQUI-46	25¢
vulgaris erecta. Edelwiss.....	AQUI-48E	20¢	
Species Blend. Made up of the species above; no long spurred sorts.....	AQUI-X	20¢	

ARABIS (AR-ah-bis)

Rock Cress. Annuals, biennials, perennials with several fine RG species all easily grown; mostly low, fls in terminal spikes or racemes, blooming in early spring.			
—alpina grandiflora. A large pure white strain; 9"; HP.....	ARAB-2G.....	15¢	
—nana compacta. A very dwarf free flowering white strain; HP.....	ARAB-2C.....	20¢	
—rosea. Very pretty bright rose strain; silver-gray fol; 6"; HP.....	ARAB-2Z.....	20¢	
Breweri. Rare dwarf shrubby sp. RG, fls deep red; 6"; Cal; HP.....	ARAB-9.....	25¢	
pumila, Snow Cap.....	Profuse, white flowers; trailer, RG; 6"; HP.....	ARAB-35S.....	20¢
purpurascens. Dense cushions of neat rosettes; deep rose; HP.....	ARAB-36.....	25¢	
Schneehaube. A pretty white strain; very early; HP.....	ARAB-39.....	20¢	
Saier's Arabis Blend. Hand made blend of many species and varieties.....	ARAB-X.....	20¢	

ARBUTUS AHR-beu-tis)

Grown outdoors in warm sections or under glass in the N; grown from seeds; best in well drained soil. They are evergreen trees or shrubs with attractive flowers.

Unedo. Strawberry Tree. Drooping clusters white or pink 30 ft; HHP..... **ARBU-4** | 20¢ |

ARCTOSTAPHYLOS (ark-toh-STAF-ee-los)

Bearberry, Manzanita. Evergreen shrubs and small trees mostly native of Calif. culture same as for Arbutus; not hardy in the North.

tomentosa . White or pinkish flowers; 15 ft; HHP.....	ARTO-22	20¢
bicolor . Flowers rose; native of Calif, 6 ft; HHP.....	ARTO-2	20¢

ARCTOTIS (ahrk-TOH-tis)

S. African annuals with attractive daisy-like flower heads valuable for cut flowers; easily grown in fair soil and full sun; start seed indoors for early flowers or they may be planted in the open in May. Flowers can be cut in the bud and will open quickly if placed in the sun. They are half hardy in the North.

acaulis . Stemless; yellow ray purplish beneath, 8"; HHA.....	ARCT-1	20¢	
staechadifolia . African Daisy. Pure white with blue disk, easy; 12" HHA.....	ARCT-8	10¢	
Large Flowered Hybrids	Shades in yellow, orange, bronze, red	ARCT-8H	15¢
Arctotis Blend . All varieties and species; HHA.....	ARCT-X	10¢	

ARDISIA (ahr-DIZ-i-ah)

A large genus of tropical ornamental evergreens for the greenhouse. They make nice pot plants; seed germinates readily.

macrocarpa. Tender sh. red fls in cymes..... **ARDS-4** | 30¢ |

ARENARIA (ar-e-NAY-ri-ah)

Sandwort. Low growing annuals and perennials usually in low mats; RG..... They are excellent for carpet bedding; do best in sand soil.

laricifolia . Large white fls, extra RG, 8"; HP.....	AREN-23	20¢
lithophila . Extra good white fls, April-May; 1 ft; HP.....	AREN-27	20¢
montana . Charming sp; pure white, free bloomer, trailer; HP.....	AREN-29	25¢
Arenaria Blend . All kinds mixed.....	AREN-X	15¢

ARGEMONE (ahr-je-MOH-ne)

Prickly Poppy. Grown as annuals in the flower garden, thriving in any good soil in a sunny place. Large poppy-like fls; 2-4 ft tall; the plants make fine hedges; April.

grandiflora alba . White fls, foliage marbled white, 3 ft; HHA.....	ARGE-2	15¢
hispidula	ARGE-4H	20¢
platyceras rosea . Blooms for months, bluish rose-crimson; 4 ft; HHA.....	ARGE-4	20¢
Argemone Blend	ARGE-X	15¢

ARISTEA (ah-RIS-te-ah)

S. African plants tender in the North but grown in the open in Calif. Leaves are in basal rosettes fls blue in spikes. Grown in the GH in the North.

Ecklonii . Bright blue fls, 2-3" across; 1 ft; TP.....	ARIT-3	25¢
hybrids, Mixed Varieties	ARIT-X	15¢

ARISTOLOCHIA (ar-is-toh-LOH-ki-ah)

Dutchpipe Vine. Mostly perennial climbers with odd shaped leaves. Some are grown in the GH. Easily grown from seed.

elegans. Purple-brown fls., white markings GH climber, hardy S of D.C..... **ARST-5** | 25¢ |

ARMERIA (ahr-MEER-ee-ah) Thrift, Sea-pink

Statice, Thrift, Sea-pink. Dwarf perennials making excellent border and RG plants best in a sunny position and well drained. The genus has been reclassified of late.

juniperifolia . Hardy RG alpine; 2" tall; white to deep pink, HP.....	ARME-10	25¢
maritima . White to deep rose; 1 ft; HP.....	ARME-14	15¢
alpina . White fls 1" across; 8" tall; HP.....	ARME-14A	15¢
tomosa hybrids . Large fls in many colors; 1½ ft HP.....	ARME-6H	15¢
Welwitschii v. stenophylla . Tufted sh pink flower heads 1 ft; HHP.....	ARME-22	25¢

ARNICA (AR-ni-ka)

Perennial plants with clustered basal lvs. and bright yellow fls on long spikes. Ef.

cordifolia . Hardy; heads, ray fls; 15"; HP.....	ARNI-6	20¢
montana . Mountain Tobacco. Large heads yellow ray fls; 2 ft; HP.....	ARNI-11	15¢

ARTEMISIA (ahr-tee-MIZ-e-ah)

Wormwood. Hardy aromatic plants. The fl is in heads and composed entirely of tubular disk fls. Grown mainly for their aromatic and medicinal properties; thrive in poor soils. Flower in late summer and make nice plants in the back border.

caucasica	ARTE-15	25¢
sacrorum v. viridis . Summer Fire. Erect; yellowish fls; 3-5 ft; HA.....	ARTE-40V	20¢
vulgaris . Erect yellowish fl heads; free; fragrant; 3½ ft, HP.....	ARTE-50	20¢

ARTHROPODIUM (ahr-throh-POH-di-um)

Tufted perennials of Lily Family grown in GH in N; lvs grass-like, fls in clusters.

cirrhaleum. 3 ft stems carrying hundreds small white fls; cuts (5-6) HHP..... **ARTH-2** | 25¢ |

Seed list continued on page ten.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Saier's GARDEN MAGAZINE

DIMONDALE, MICHIGAN.

VOL. 2. No. 12.

June 1951.

Owner and publisher of **Saier's Garden Magazine**, Harry E. Saier, Dimondale, Mich. Issued each month. Subscription price \$2.00 per year; 2 years, \$3.00; single copies 25 cents.

Each magazine is made up of three sections of 16 pages, each section being printed every ten days. The last section is always the latest to be printed and corrections in them always cover the former sections.

Send orders to the **PIONEER SEED COMPANY**, Dimondale, Michigan.

Free copies will be mailed upon request but if all issues are wanted it will be necessary to subscribe. Back copies cannot be supplied. All issues will be indexed and we expect to be able to furnish subscribers with a suitable container to hold your copies for easy reference. You will find that your complete file will cover a large field of gardening information not to be found in any other publication.

TO GARDEN CLUBS: We will be pleased to allow a special subscription rate to Clubs sending in 10 or more subscriptions. This will be an excellent opportunity for your Club to add funds to its treasury. Write us.

Our New Format

First we want to explain the lack of the usual catalog during the past summer. Those who have paid subscriptions on file have wondered why the failure of delivery and many have written to inquire whether they have been missed, we hope all were answered but the help problem continually plagues us.

For some time we have had in mind getting the catalog out in its present form. This has almost been even necessary for under present conditions, not only as to costs but many other reasons, that we have now installed our own printing plant and the copy you are now reading is the first issue to be turn out. There are many improvements yet to be made but you can depend upon us to waste little time in making them.

The present form allows us, not only to add new seeds promptly but what is more important, to take them out of the list as the seed supply has been exhausted which often happens on the more rare species. This not only makes us a lot of unnecessary work but avoids a lot of dissatisfaction from our customers.

Our magazine will make an ideal outlet for the various collectors and we will be pleased to have them write us; we, also, are always glad to cooperate in any collection trips.

FEATHERED COCKSCOMB FOR BEDS.

The feathered type of Celosia, listed as *C. plumosa*, make a fine showing in beds, as well as useful for cut flowers.

The variety listed as *Thompsoni* grows about 3 feet high and come in a most magnificent range of colors and shades of red, yellow and pink.

Fiery Feather is a dwarf variety growing 1 foot high. The best strain of this makes a gorgeous display with their fiery crimson plumes and contrasting with the light green foliage. These are also fine for pot culture as well as for bedding and cutting.



ASTER
Princess Bonnie



ACROCLINIUM
Helipterus roseum



AGROSTEMMA
Githago



AQUILEGIA
longissima

ASTERS IDEAL FOR CUTTING

ARUM (AY-rum)

Require rich soil, plenty of water and a shady place; some are pot plants in GH and others are hardy. If undisturbed they will form better flowers; tuberous rooted.

italicum. Creamy white fls in sp; pretty fol, evergreen in S; 1 ft; HHP.....**ARUM-1** 20¢

-pictum. Spathe with green tube and purple limb.....**ARUM-6** 20¢

ASCLEPIAS (as-KLEE-pi-as)

Silkweed. Attractive habit and showy flowers; they make nice plants in the border. They are easily grown from seed started same as most perennials.

curassavica.....**Blood Flower**. Reddish purple corolla, or. hoods; 3 ft; TA.....**ASCL-3** 20¢

syriaca. Green or purplish fls; July-Aug 5 ft HP.....**ASCL-14** 20¢

tuberosa. Orange flowers, July-August, 2-3 ft., HP.....**ASCL-15** 15¢

ASPARAGUS (ass-PAR-ah-gus)

The decorative species are easily grown but are tender plants in the N. Those listed below are grown for their green foliage.

-asparagoides. Smilax of the GH. Berries dark purple.....**ASPG-4** 25¢

plumosus. The tall climber for GR fine foliage for cutting; TP.....**ASPG-16** 25¢

scandens v deflexus. Small form, deflexed branches, nod'g w fls; 4 ft TP.....**ASPG-18** 25¢

-racemosa. Tall cl; handsome foliage; dense sprays fls.....**ASPG-17** 25¢

-Sprengeri. Climbing fern to 6 ft; popular GH plant for greens.....**ASPG-20** 25¢

ASPERULA (as-PER-eu-lah)

Used mainly in the RG or for carpeting shady places, growing best in moist spots. Easily grown; the leaves are in whorls and the flowers small lily-shaped, in white, blue or pink. Woodruff.

orientalis. Pretty blue fls effective in carpeting; 1 ft; HA.....**ASPR-13** 15¢

tinctoria. Procumbent, white fls, red outside; 1 ft; HP.....**ASPR-13** 15¢

ASPHODELUS (AS-foh-del-us)

Easy culture in the border or wild garden in rich sandy loam. Flowers lily-like.

-Species from the Pyrenees.....**ASPH-3** 30¢

ASPHODELINE (ass-pho-de-LIN-ee) Jacob's.s.Rod.

Differs from *Asphodelus* only in the flower stems being leafless and the foliage clustered at the base; culture.

lutens. King's Spear. Frag. yellow fls in racemes; part shade; 2-4 ft; HP.....**ASPD-4** 20¢

ASTERS

Sow seeds indoors 6 weeks before time to set out in their beds which is after danger of frost has passed. Do not crowd, usually a foot apart, and use care that do not suffer a set back thru over watering, crowding or drought. It is best to transplant seedlings once. As the roots of Asters are shallow, use care in cultivating. Make succession plantings for continuous bloom, but when possible use different types which flower at different times. All strains are wilt resistant unless so noted.

AMERICAN or VICK'S BRANCHING:

Plants 2-2½ ft tall, branching, robust, flowers double, semi-ball shaped, late Aug.

-White, 1W; Crimson, 1C; Lavender, 1L; separte colors.....**AST-1** 15¢

Blend of American Branching. A careful hand made blend.....**AST-1X** 10¢

CREGO:

Plants robust, branching, 2-2½ ft fls large, double, blooms mid-Aug; all purpose type.

-Enchantress (WR). Lively salmon rose, NEW.....**AST-2E** 15¢

-Light Blue (WR). Fine color for cut flowers.....**AST-2B** 15¢

-Peach Blossom (WR). Delicate pink, excellent for cutting.....**AST-2P** 15¢

-Crego Blend (WR). Just the right blend for cut flowers.....**AST-2X** 15¢

EARLY BEAUTY:

Planted at the same time, they will flower with the Cregos andd American Branching or in early Sept till frost; plants 2½-3 ft, large well formed flowers of excellent keeping qualities; wilt resistant.

-Azure Fairy. Just the right shade of light blue.....**AST-3A** 15¢

-Crimson. A deep rich cut flower shade: excellent for cutting.....**AST-3C** 15¢

-Deep Rose. Makes a rich shade in rose-pink.....**AST-3Z** 15¢

-White. All planting should contain plenty of white.....**AST-3W** 15¢

-Early Beauty Blend. A blend for the right cutting colors.....**AST-3X** 15¢

GIANTS OF CALIFORNIA:

Non-resistant strain. The flowers are of the Crego type, curled and twisted making a fine cut flower sort; stems stiff and non-branching, 3 ft tall, blooming late summer.

-Azure Blue. Rich cut flower shade.....**AST-4B** 15¢

-Crimson. Rich color strain.....**AST-4C** 15¢

-Loveliness..A rich pure pink touched with salmon.....**AST-4L** 15¢

-Peach Blossom..Opens white, flushed lavender-pink.....**AST-4P** 15¢

-White.....Pure white of excellent form.....**AST-4W** 15¢

-Giants of California Blend.....A cut flower blend in right porportion.....**AST-4X** 15¢

GIANT COMET:

Plants upright' 2 ft, non-branching, flowers feathery, double, in bloom middle of Aug.

A fine type for cut flowers, wilt resistant.

Seed list continued on page eleven.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Starved Acres

Probably the most convincing statement on the value of mulches and organic gardening was in an article read some time ago in which the writer described his land and his gardening practice.

His farm was known as 'Starved Acres' and the name described the soil to perfection. It was lacking in organic matter and not able to produce the slightest results.

However, upon the farm was an oak wood lot of some acres, where immense oak trees grew. The writer looked up towards the tops of these oaks and wondered why they could be so tall and big when he was unable to grow anything on the soil. He finally realized that the answer to his question was not in the tops of the trees but at his feet where he saw the same lean soil but instead of the bare ground in his fields, here the ground was covered with a thick mulch and only because of this difference the trees were growing well.

Upon following the same practice in his fields he gradually changed his soil to a profitable one. On our own fields we follow this same practice and where a crop of beans has been growing it is followed by a crop of wheat from which only the grain is taken and the straw left on the land. The wheat has in the meantime been seeded to clover and this is left for seed and again the clover straw is left on the land. After the wheat has been combined the stubble is mowed to get the weeds that will ripen by fall and thus the ground is covered with a mulch two years out of three and a crop is grown each year. The condition of this soil is ideal and we are sure that disease is also at a minimum as well as insect infestation.

We have not found it to pay us to use fertilizers.

H. E. Saier

Enviornment

Some very good thots are pointed out in an article by Mrs. Myrtle Hebert of Montana in one of the Penstemon Society bulletins.

She says, 'I think one stumbling block with some people is a combination of rich soil and moisture. I remember some dry years and what glorious Penstemons we had then. Even *P. erianthus*, which I find very tempermental, was something to dream about in those years. Even in the wild it has not been like that since the wet years came.

We will print more itims on this same subject in future issues for the condition of the soil and especially as to its degree of richness has much to do with the failure of many, in getting proper growth, and plants to flower properly.

CUTTING SWEET BASIL.

Some growers cut the tipsoff first and at the time the flower heads start to bloom. This is all right and gives a fine quality but is an expensive method, especialy in the drying.

Probably it would be best, especially for the market gardener to cut the whole stem when the flower spike is well formed. Make the cutting 3-4 inches above the ground.

Tie in bunches of about a pound each green weight and hang up in a dry, airy place to dry.

Always cut herbs in the late morning, for best flavored stock. Remember Basil grown on poor soil does not have the fine flavor as it has on good soil.

ASTERS-ASTRANTIA-AUBRIETIA

ASTERS Continued from page 10.

- Rose.....AST-5Z. 15¢
- Salmon Queen. Dandy soft color for cutflowers.....AST-5S. 15¢
- Giant Comet Blend.....A blend for cut flowers.....AST-5X. 15¢

KING or NEEDLE TYPE:

- Blend of Colors.....AST-9X. 20¢

OSTRICH FEATHER:

Plants 2-2½ ft branching, blooming in mid-August. Flowers feathery, double, and a all purpose flower; wilt resistat.

- Bright Rose.....AST-6Z. 15¢
- Crimson.....AST-6C. 15¢
- Malmaison Pink.....AST-6P. 15¢
- Pure White.....AST-6W. 15¢
- Blend. A hand made blend for cut flowers.....AST-6X. 15¢

POM POM TYPE:

Small flowered type; incurved petals; showy cutflower for small bouquets or edging.

- Rose.....AST-11Z. 20¢
- Crimson.....AST-11C. 20¢
- Blend of Colors.....AST-11X. 20¢

PRINCESS:

Attractive new cutting type; 2-2½ ft tall branching, early, 3-3½ inch flowers on strong stems and with full deep crested centers surrounded by several rows of dainty plume-like petals. Wilt resistant.

- Barbara. New orchid color, very attractive.....AST-7B. 15¢
- Bonnie. Soft salmon-rose.....AST-7N. 15¢
- Elizabeth.....Pure white making a beutiful cut flower.....AST-7E. 15¢
- Linda. Clear rose beautiful for cut flowers, NEW.....AST-7L. 15¢
- Margaret. NEW. Very pretty deep rose.....AES-7M. 15¢
- Susan. NEW. True deep blue, in a clear shade.....AST-7S. 15¢
- Princess Blend. A blend of above varieties; a beautiful addition.....AST-7X. 15¢

QUEEN OF THE MARKET:

A very popular early flowering Aster, branching, 20 inch tall, blooming in early August, one of the most popular for early cut flowers. Wilt resistant.

- Ballet Queen. Fasinating salmon-rose, extremely wit resistant.....AST-8Q. 15¢
- Crimson.....AST-8C. 15¢
- Pure White.....AST-8W. 15¢
- Salmon-rose.....AST-8Z. 15¢
- Queen of the Market Blend.....AST-8X. 15¢

SUPER GIANTS OF CALIFORNIA:

This is the largest and most fully double Aster class yet developed; flowers 6-8 inches across, graceful, interlacing petals. Plants 2½ ft tall; 6-8 non-lateral stems per plant.

- El Monte. A clear deep crimson.....AST-10C. 20¢
- Los Angeles. A beautiful shell pink making it a fine cut flower.....AST-10L. 20¢

ROSANNA.

A new Aster, excellent for pot culture, well proportioned, 10-12" high with strong stems having a bunch of several half double flowers in bright carmine-red with a yellow center; potting can be done without fading, whole plant starting to flower same time.

- Heart of France. Late branching, flaming red.....AST-HF. 20¢
- Nero. Semi double branching, red.....AST-N. 15¢
- Single Flowering VIVID. Red.....AST-12V. 20¢

PERENNIAL SPECIES OF ASTERS:

- alpinus albus. RG, white form, daisy-like fls on 6" plants, HP.....AST-14A. 20¢
- Large Flowered. Large fls on 9" plants in various colors; HP.....AST-14L. 20¢
- superbus. Larger than the type and showy; HP.....AST-14S. 20¢
- caucasicus. 1½" heads, purple ray, 2 ft; HP.....AST-20. 20¢
- commutus crassulus. Small flowered white, Mont; Aug., 2 ft; HP.....AST-23. 20¢
- conspicuous. Profuse, 1" pure rose fls, 18 inch; HP.....AST-25. 20¢
- Farreri. Narrow violet ray petals, vermilion-orange disk; nice 1 ft; HP.....AST-40. 25¢
- himalaicus. Heads 1½" across; lilac-blue ray fls; 1½ ft; HP.....AST-57. 30¢
- sikkimensis.....Indian species.....AST-108. 30¢
- subcaeruleus. Very large lilac-blue fls; very good, 9"; HP.....AST-110. 25¢
- Star of the Warburg. Bright lavender-blue, prominent yellow center AST-116W. 25¢
- Perennial Aster Blend. All hardy perennials.....AST-PX. 20¢

ASTILBE (a-STIL-be)

The florist Spirea. Easily forced in the greenhouse. Easily grown from spring sown seed; use soil containing sand, peat and leaf mold. Thrives in moist soil and part shade. rivularis. Yellowish white fls 1 large panicles; 5 ft; HHP.....ASTI-10. 20¢

ASTRAGALUS (as-TRAG-ah-lus)

Milk Vetch. Deeply cut leaves and purple, yellow or white flowers in spikes or racemes thrives in light sandy soil and used in the rock garden or border; easily grown from seed planted in the spring.

- Purshii. Mat-forming, white woolly lvs; fls white or blue; sun, RG, HP.....ASTR-30. 20¢

ASTRANTIA (as-TRAN-shi-ah)

The flowers are in odd and attractive umbels and make interesting plants in the border, especially in moist places. Seed from all varieties does not come 100% true.

- carniolica. White or bluish fls; pretty; June-July, 1 ft, HP.....ASTN-2. 25¢

AUBRIETA (au-BREE-shi-ah)

Choice mat forming perennials prized for their abundant flowers in the spring. They are favorites in the rock garden and closely allied to and resemble Arabis. Easily grown from seed, started any time, for flowering the following season. They are especially good between rocks and like a little shade.

- Campbelli. Ageratum blue.....AUBR-2C. 20¢
- Leichtlinii. Deep purple rose.....AUBR-2L. 20¢
- deltoidea. The species of which all the popular garden varieties belong.....AUBR-2. 15¢
- Eyrei. Very beautiful blue; HP.....AUBR-2E. 25¢
- graeca. Large and more bushy than type; HP.....AUBR-2G. 25¢
- Hybrida. Large flowered types from crosses; HP.....AUBR-4. 25¢
- Glorious Regal Hybrids.....AUBR-3G. 20¢
- Hendersonii.....AUBR-2H. 20¢
- Leichtlinii. Deep purple-rose; HP.....AUBR-2L. 25¢
- Mrs.....Rodewald. From the largest red fls; 3"; HP.....AUBR-2R. 20¢
- Whitewall Gem. Pretty violet flowers; HP.....AUBR-2W. 20¢
- Borsch's Brilliant. Dark green fol; brilliant crimson fls; 6", HP.....AUBR-2B. 25¢
- floripena. Semi-double fls HP.....AUBR-2F. 30¢
- Aubrieta Blend. Many varieties; HP.....AUBR-X. 20¢

PIONEER SEED COMPANY

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Labeling Beds

Where cuttings or other plants are set out in rows, whether in seed beds or in the field, the labels or stakes should always face the front of the bed or field and therefore anyone can tell at once how to read the stakes.

In setting out the plants, always start at the left front side of the bed or field, setting the variety or kind as far as it will go, and if it must be continued to the next row always come back to the front and proceed as in the first row; never just jump over an set backward, as one is always tempted to do, especially in long rows in the field.

The second lot of plants should follow the first lot, always to the end of the row and then coming back to the front and to the next row to the RIGHT. Always leave a space of 2 or 3 plants between kinds so that in case a stake should be knocked over its proper location is easily found.

This is the standard method of marking plants in the rows. It is also the most simple and anyone else can easily tell what plants go with any stake.

Tuberous Begonias Grown from Seed

Tuberous Begonias are usually grown from seed which should be planted in February.

The best method is to use a covered dish for a container, in which an inch of sphagnum moss has been placed and on top of this a thin layer of finely screened sphagnum.

Moisten and scatter the seed evenly on top of the moss. Cover with glass and any further watering must be done from below. Always keep the container closed till seeds have germinated.

Sterilize container and the medium before using. The container must be all glass.

AN IDEAL SEED BED FOR SMALL SEED

When you have small seeds such as Begonias, Petunias, the Gesnerias, Coleus, etc., the following method will give best results for the average grower.

For growing medium use a fine peat or milled sphagnum with sand, equal parts. Always sterilize the seed medium with boiling water or baking; cool and then place in a glass dish for which you have a glass cover. Place about one inch of this medium in the dish and sift over the surface a thin layer of sphagnum on which you scatter your seed. To get an even coverage a very little of the finest of the sifted sphagnum can be mixed with the seed and in this way a more even planting can be accomplished.

Cover the dish and place in a warm dark part of the room and as soon as the seedlings appear, move to the light; turn the dish around every day so as to give the seedlings an equal chance to the light.

Ventilate after growth starts by lifting the cover for a short period, then keep covered. Prick seedlings out as soon as ready.

COVERING SEED BEDS WITH STRAW

Don't do it. If you have straw or other coarse material on your outdoor seed beds examine them at once for mice damage, it makes an ideal nesting place for them and your seeds a convenient food.

If it is necessary to cover such beds a fine screen could be used if put on AFTER the soil is frozen; if done before, mice will only dig under it and thus the fine screen would be of no value. Glass wool, Vermiculite or even saw dust can be used.

BAPTISIA - BEGONIAS - BELLIS

AUCUBA (AU-keu-bah)

—himalaica. Orange to scarlet fruits; for the South.....ACUB-3. 25¢
—japonica aureo maculata. Attractive sh; golden variegated lvs; 4 ft.....ACUB-4M. 50¢

AVENA (ah-VEN-ah) Ornamental Oats.

Mostly annual grasses with loose panicles, seed sown early in the spring or in the fall in the South. They are used mainly as ornamental grasses and can be dried.

—sterilis. 3 ft; awns 2 inches or more; HA.....AVEN-6. 15¢

AZALIA: See under Rhododendron, to which it belongs.

BAERIA (BEHR-ee-ah) Goldfields

Small annuals of Calif., 1 ft. high with many heads of small yellow daisy-like flowers. Bloom in late spring and summer; easy; used for edging or for everlasting.

—chrysostoma. (aristata). 10 in. high; heads ½ inch across, HA.....BAER-1. 20¢

BALLOON VINE: see Cardiospermum Halicacabum.

BARLERIA (bar-LEER-ee-ah)

Tropical plants grown in the greenhouse in the N or out doors in the far S.

—lupulina. Thorny sh; long gr. lvs. with red mid rib; fls yel; GH.....BALR-3. 25¢

—species. From S. Rhodesia; pure white fls all summer; RG; not hdy N.....BARL-5. 25¢

BAUHINIA boh-HIN-ee-ah)

Tropical plants of Pea Family. In the South they make a fine showing with their colorful racemes of white, purple and yellow flowers. Tender perennials.

—acuminata. Sh to 6 ft; handle as TA in N; fls white; good pot pl.....BAUH-2. 20¢

—Hookeri. Large tree; crimson-edged white fls; for the South.....BAUH-8. 25¢

—variegata, v. candida. White fls veined green; tr 20 ft; for S.....BAUH-18. 25¢

—Bauhnia Mixture.....For those who wish to try them all.....BAUH-X. 20¢

BELLS OF IRELAND: See Molucella laevis. Shell-flower; Mollucca-balm.

BEANS, Ornamental

—Scarlet Runner. Climber with scarlet fls; ornamental vine; 10 ft.....BEAN-1. 15¢

BEAUMONTIA (boh-MON-shi-ah) Apocynaceae.

Vigorous woody tropical vines probably best grown in the greenhouse.

—grandiflora. Herald's Trumpet. Fragrant white fls; vine; spring bl.....BEAU-1.25¢

BALSAM GARDEN: See Impatiens balsamina.

BALSAMORHIZA (Bol-sam-or-RYE-zuh) Balsam Root

An American genus having Sunflower-like flowers. The roots are large and resinous. They are nice plants in the wild garden.

—sagittata. Leaves like shields; 1½-2 ft tall; April, HP.....BALS-5. 15¢

BAPTISTA (bap-TEZ-ee-ah) False or Wild Indigo

Sturdy perennials growing to 6 ft. The foliage is deep green and attractive in the border; the flowers resemble Lupines in form and come in all shades of blue, white and yellow. Late in the fall the seed pods turn black and are thus rather showy. Seed can be planted where the plants are to grow; easily grown; a rich soil best; hardy perennials.

—australis. Deep blue flowers; 3-4 ft; June-July; tallest species.....BAPT-2. 15¢

—hybrids. These come in varying shades of blue.....BAPT-2H. 15¢

BEGONIAS

This is a very large and varied group. Those that are popular pot plants in the greenhouse are mainly under B. semperflorens and grown for their flowers. About all of are very popular pot plants, both for flowers and foliage. All can be easily grown from seed as well as from leaf cuttings. The seed is very small and care must be used in handling them. Divided into 3 groups: fibrous rooted, tuberous rooted and rhizomatous.

SEMPERFLORENS: A dwarf compact grower; almost an everblooming plant and very popular both for bedding and for greenhouse pot plants. They come in many highly improved varieties and many beautiful colors. All grown as annuals.

—Bedding Queen. A dainty shade of rose; bronze foliage.....BEG-2B. 40¢

—Christmas Cheer. Attractive red.....BEG-2C. 40¢

—Compacta. Compact strain in many colors; a German strain.....BEG-2CP. 40¢

—Erfordia. A beautiful rosy carnine.....BEG-2E. 40¢

—Glow. Improved Fire Sea. Brilliant scarlet; dark foliage.....BEG-2G. 40¢

—Gustav Knaake. A strong grower; fiery crimson.....BEG-2GR. 40¢

—Ile de France. Pure white with yellow stamens; light green foliage.....BEG-2F. 40¢

—King of the Blacks. Dwarf, bright scarlet flowers; bronze foliage.....BEG-2R. 40¢

—Salmon Queen. A popular variety; salmon-red and dark foliage.....BEG-2Q. 40¢

—White Beauty. Pure white, light glossy green foliage.....BEG-2W. 40¢

—Blend of the above listed varieties.....BEG-2X. 40¢

SEMPERFLORENS GRACILIS: Compact and dwarf plants especially suited for GH.

—Adeline. Beautiful rose-pink; green foliage.....BEG-3A. 40¢

—Indian Maid. Bright scarlet; dark bronzy foliage.....BEG-3M. 40¢

—Luminosa. A dandy scarlet-red and dark foliage.....BEG-3L. 40¢

—Blend of above varieties.....BEG-3X. 40¢

BEGONIA SPECIES

—Andean species. Collected Begonias from Columbia.....BEG-6. 30¢

—Andersonij. Fls in an umbel at apex of tall spike.....BEG-9. 30¢

—Evansiana. Tuberous; 2 ft; stands some frost; fls flesh color.....BEG-43. 40¢

—ferruginea. Collected in Columbia.....BEG-47. 30¢

—foliosa. Fibrous; 1½ ft; fls white tinged rose; good basket type.....BEG-48. 40¢

—gigantea. Flowers small white or pale pink; good for pots or bedding.....BEG-54. 30¢

—REX type. Many foliage variations; popular foliage pot plant.....BEG-117. 50¢

—Begonia Blend. Contains all Begonias listed.....BEG-X. 40¢

—Tuberous, Mixed. Basket type, in a fine blend of colors.....BEG-XT. 40¢

BELAMCANDA (bel-am-KAN-dah) Iridaceae

Iris-like perennials with stout root stalk, grown for their flowers and blackberry-like fruits which can be made up into pretty dried material. Easily grown in sun; sandy soil.

—chinensis. Blackberry lily; 4 ft; orange spotted red fls; HP.....BEAL-1. 20¢

BELLIS (BELL-iss)

Herbaceous annuals or perennials. They need a fertile moist soil with plenty of sun. Seed planted in the fall and wintered over in the cold frame will flower in the spring or seed can be started indoors with same result. They grow 6-8 inches tall and make very attractive bedding or edging plants; cool weather plants; try with Pansies or Myosotis.

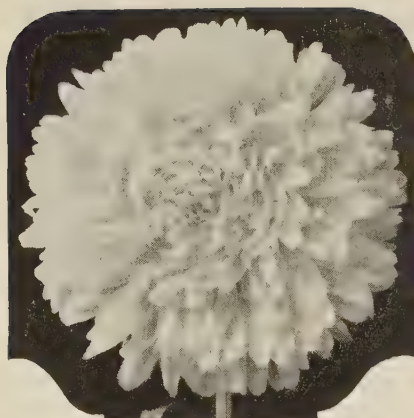
MINIATURE TYPE: Small flowered type very dainty for edging; HB.

—Rose.....BELL-7Z. 20¢

—White.....BELL-7W. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN



ASTER - Early Beauty.

Genus Jasion

A small genus of the Campanulaceae Family and to those who have a special interest in tracing the affinities of plants, this genus will be interesting as its anthers are, as in the Composites, united at the base and form a ring or sheath around the style.

While strictly not a showy family, they are pretty. The flowers are blue, and in a way like the Scabiosa and thus the common name of Sheep's Scabious.

J. perennis is the most commonly grown, is 10-12 inches tall, with stems bent at the base, but afterwards erect, bearing on long stalks compact heads of bright blue flowers surrounded at the base with a broad rosette of bracts. Flowers in July and August. A good and useful rock garden plant or in the low border flourishing in a well drained, light loam; native of the mountains of S. Europe.

We have been selecting plants in our own seed plots so as to get, not only uniform shape and size, but a good blue color as well.

J. humilis is a creeping somewhat tufted, habit, rarely exceeding 8 inches, bearing on short stalks compact heads of blue flowers about July and August. The plant is quite hardy, but found at high elevations on the Pyrenees and enjoying there a blanket of snow during the winter months. It often succumbs to the combined influence of damp and frost unprotected in our climate. A litter is all that is necessary to keep it safe.

It should be cultivated on rock work, in a light rich loam on the drier possible bottom but liberally supplied in summer with water during a drought.

ABBREVIATIONS

The following abbreviations are used to save space: A-annual; B-biennial plants, that seed the second year and then die; P-perennial, those that live more than three years; H-hardy, say in southern Michigan; HH-half hardy, as HHA, half hardy annual, that does not stand any frost, a HA, a hardy annual that can be planted early in the spring and will stand cold cmfwylu hsrdu lhrshrdl shrdl shhrd weather; Tender, a TP or TB is one that is not hardy here in southern Michigan and thus would have to be grown outdoors only in a warm temperature or most likely a greenhouse plant; GH-for greenhouse; Sh-shrub as a HSh or TSh; G as G10 germinates in about 10 days; fls-flowers; the months when used means the approximate time the plant flowers in southern Michigan; this will vary north and south and according to climate. N and S-north and south; a * after B or P means it is best grown as an annual in the North; the hardness is subject to change in different sections, a plant might be on a certain type and location of soil and a 100 miles south on another type.

BRACHYCOME-BRIZA-BRODIAEA

BELLIS Continued from page 12.

—Miniature Mixed.....	BELL-7X. 20¢
MONSTROSA: Giant flowered type, strong growers: fine for bedding.	
—Red Beauty. Double red flowers.....	BELL-4R. 20¢
—Rose Beauty. Pretty double rose flowers.....	BELL-4Z. 20¢
—White Beauty. Double pure white.....	BELL-4W. 20¢
—Monstrosa Blend. In red, pink, rose and white.	BELL-4X. 15¢
MONSTROSA TUBULOSA: Flowers with pretty quilled petals; the flowers double.	
—Bernina. White changing to pink; double.....	BELL-6B. 20¢
—Etna. Double dark red.....	BELL-6E. 20¢
—Lutea. Double rich yellow flowers.....	BELL-6L. 20¢
—Tiflis. Double carmine-rose.....	BELL-6T. 20¢
—Tubulosa Blend. Made up of the above varieties.....	BELL-6X. 20¢
PERENNIS: True or English Daisy; 6"; HP; popular spring plants	
—Longfellow. An extra double bright red strain.....	BELL-3L. 15¢
—Rose. Same in a ood rose.....	BELL-3LZ. 15¢
—Vesuvius. Extra double ruby-red.....	BELL-3V. 15¢
—Rosea. White with delicate rose center.....	BELL-3Z. 15¢
—Snowball. Pure white; double flowers.....	BELL-3W. 15¢
—Perennis Blend. Above varieties.....	BELL-3X. 15¢

BESSEYA: see Synthyris.

BIDENS (BY-denz) Burr-marigold

Closely related to Cosmos and resembles it with its divided leaves and clustered heads of yellow or white ray flowers. Grow in moist places; easily grown.

—dahljodes. (Cosmos atrosanguinea).....Large Dahlia-like fls; red, HP.....BIDE-3. 20¢

BIXA (BIX-ah) Annatto

Tropical American tree grown in S Fla for the annatto dye from pulp around seeds....

—Orellana. Easily grown from seed; the dye used in butter coloring.....BIXA-1. 25¢

BLOOMERIA (bloo-MEE-re-ah) Golden Stars

They stand several degrees of frost; thrive in sandy soil and sun; corms should be dug after ripening and replanted in the fall; easily grown from seed.HHP.

—Clevelandii. A miniature Bloomeria; cute in the RG; HHP.....BLOO-2. 30¢

—crocea. Golden Stars. Pure yellow; 18 inches; not hary in far N; HHP.....BLOO-1. 30¢

BOLTONIA (bol-TOH-nee-ah)

They resemble wild Asters; are easily grown from used and make nice plants in the border or wild garden; found in moist places; HP.

—latisquama. Heads in rays blue-violet; 1 inch across; HP.....BOLT-2. 20¢

BOLUSANTHUS (bo-luh-SAN-thus)

One African trees that can be grown in S. Calif.

—speciosus. Rhodesian Wisteria. Tr 15 ft; pendant racemes purple-blue.....BOLO-1. 30¢

BOMBAX (BOM-bax)

S. AM. twining plants grown in the cool green house or out doors in the South. Rich soil and partial shade best for them.

—Andean species. Collected in Columbia.....BOMA-1. 40¢

BRACHYCOME....(brak-KIK-oh-me) Swan River Daisy

Herbaceous annuals and perennials generally branching stems and solitary or loosely clustered heads of daisy-like flowers. Easily grown from seed.

IBERIDIFOLA: Covered through the summer with star-shaped blooms; 12 in. HA.

—Blue Star.BRAK-1B. 15¢

—White.BRAK-1W. 15¢

—Pink.BRAK-1P. 15¢

—Red Star.BRAK-1R. 15¢

—Mixed.BRAK-1X. 10¢

BRIZA (BRY-zah) Quacking Grass Ornamental Grass

Quacking Gras. Ornamental grasses grown for bouquets, dried or for specem plantings. Sow seed early in spring in average garden soil; easily grown.

—maxima. To 2 ft. HA.....BRIZ-1. 15¢

—minor. To 18 inches, HA.....BRIZ-2. 15¢

BRODIAEA (broh-di-EE-ah)

Hardy on West Coast and in the South; in North they can be grown in RG with good winter protection. Excellent for naturalizing; dislikes wet situations

—californica. Violet-purple fls; 1 ft., Calif; HP.....BROD-2. 25¢

—capitata. (Now Dichelostemma pulcellum).....Earliest, light blue, HP.....BROD-3. 25¢

—coronaria. Most beautiful, fls. violet-purple, 1 ft. rare, HP.....BROD-3.40¢

—Hendersonii. Fls. striped brown in heads, RG, 6 in., HP.....BROD-7. 25¢

—ixiodes. (Now Tritoleia ixiodes). Soft yellow, 6 in., HP.....BROD-8. 30¢

—puchella. Erect heads, clear blue, 2 ft, sun, HP.....BROD-11. 25¢

—Brodiaea Blend. Blend of all species.BROD-X. 20¢

BROWALLIA (broh-WALL-e-ah)

Free flowering half hardy annuals, 1-1½ ft. tall, excellent bedding plants, set at least 6 inches apart. The blues are intense. Sunny locations, good soil, start seeds early indoors for early plants. Also good winter pot plants.

—americana. Blue, to 2 ft. Fine for bedding, HHA.....BROW-1B. 15¢

—speciosa major. 5 ft. fls deep blue, 2 in. ac. used in hanging baskets.....EROW-3. 20¢

BRUCKENTHALIA (bruk-en-THAL-ya)

A single species very closely related to the Heaaths and requiring same culture.

—spiculifolia. Fls racemes. very small bell-shape, pink, red berries, HP.....BRUC-1. 25¢

BRUNSFELSIA (brun-FEL-zi-ah) Greenhouse Plants

Tropical shrubs and trees grown in GH but out door in far S. Attractive plants for pots. Rich soil, night temp. 50 degrees.

—americana. To 8 ft. fls white, very frag. at nite, TP.....BRUN-1. 25¢

BUDDLEIA (BUD-lec-ah) Butterfly Bush

Butterfly Bush. Dicluous or half hardy evergreen sh. or trees, a few hardy in the N. Grows rapidly, free bloomers, easy from seed, grow on in frame first year.

—asiatica. Tender, flowered in GH in W from sd sown in sp; white.....BUDD-2. 25¢

—globosa. Orange-yellow fls; striking, 15 ft.BUDD-9. 25¢

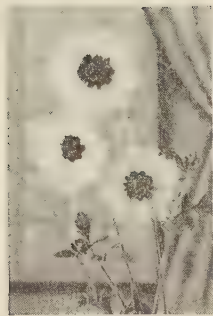
—Colvillei. Tender sh. dense spikes of purple fls; 15 ft.BUDD-5. 25¢

—intermedia. Hybrid, violet fls in drooping panicles; TSh.....BUDD-10. 25¢

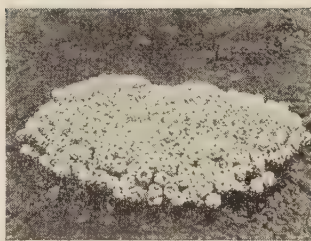
—Buddleja Blend. A blend of both varieties and species.BUDD-X. 25¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN



CALLIOPSIS
Golden Crown



ALYSSUM
Snow Cloth



CELOSIA
Dwarf Greenhouse Strain



CENTAUREA
americana



CALENDULA
Florist Strain

Coffee Cans make Ideal Seed Pans

The common one pound coffee can will make an ideal seed pan. Punch 4-5 holes in the bottom for drainage and place a little gravel or such material in the bottom to help to keep the holes open.

Fill the can two thirds full of the propagating medium to be used; and on top of this, if real small seeds are to be planted, sift a thin layer of fine sphagnum. Sit the can in some water till it is moist on top, then let stand for a while to drain. Small seeds can be scattered on top of the sphagnum but larger seeds will have to be covered according to their size and character.

Small pieces of glass can be cut to just cover these cans and each can should be kept covered till the seed starts to germinate, when the glass should be lifted for ventilation and the can also moved towards the light.

Just how much the seedlings should be ventilated and how much sunshine is needed at the start will depend upon the kind of plants being grown but both requirements are important for if too little sun is had the seedling may become lanky and nothing can then be done to overcome the damage.

Some plants will require more air than others and one can easily invite damping-off in the seed bed; one will have to learn much of this from experience and by watching the cultural requirements of the different plants.

Always water these seed pans from the bottom. There is also the temperature to be considered as well as to whether the particular plant germinate its seeds in a dark location best or if in a light place. Many seeds have apparently failed to germinate when the fault was the temperature; some must be in a cool place while others demand a night temperature of 60 degrees F.

In many kinds of plants I have found that the soil just below the layer of sifted sphagnum is light garden soil and which will be ideal for the particular plant being grown, the seedlings can be left in the seed pan longer than when there is little plant food for them to grow in. Sometimes one will be unable to transplant as soon as one should.

ROOTING CUTTINGS IN WATER

When rooting cuttings in water use a container of brown or blue glass. The cuttings will not only make root sooner but there will also be a better development, than when clear glass has been used.

FORCING BEARDED IRIS

When you wish to increase an unusually good Iris quickly, cut the terminal bud off thus forcing the dormant eyes to start growth. You can increase your stock many fold by this method.

CALCEOLARIA - CALENDULA

BULBINELLA (bul-bi-NEL-ah)

Perennial plants from New Zealand and S. Af. Fleshy tuberous roots, grass-like leaves, yellow or white fls in dense clusters at end of bare stems. Plant in RC or border, not hardy in N.

CACTUS

Popular name for many deert growing plants. They vary much in form and size, most of which are not hary in the N but grown in pots indoors. The hardy sorts must be perfectly dry in the winter and should be covered with glass to keep soil dry. To germinate seed, sow in pot of light soil, and keep inside; they require from 20 days to 4 months, grow on in pots, always watering from below and not too freely.

- cereus. Mixture of S. A cereus, fast growing, white fls; nite blooming. CACT-1. 20¢
- Strawberry Cactus. Clumps, 4 inches tall in 2 years. CACT-2. 15¢
- Barrel Cactus. Scenic desert plant; to 6 ft; white. CACT-3. 15¢
- Cactus Blend. CACT-X. 15¢

CALANDRINA (kal-an-DRIN-ee-ah) Portulaca Family

Low growing fleshy plants grown in the RG or for edging. Requires sun; fls in racemes or panicles; grow as an annual.

- amaranth. Crimson-magenta, HA. CALA-1, 20¢

CALCEOLARIA (kal-se-oh-LAY-ri-ah)

A very large genus from C. and S. Am. of creepers, plants and shrubs. All have pouch or slipper-shape fls usually in yellow, often with dots and splashes of other colors. Many are GH plants nor hardy in the North.

- biflora. Hardy per. easy, bright golden fls; 1ft. CALC-2. 30¢
- crenatiifolia. GH, yellow with orange-brown spots; TP. CALC-4. 25¢
- Dippe's Pansy-flowered. NEW type from Germany fls double pouched and in the most beautiful color combinations. No florist should miss this. CALC-4D. 50¢
- grandiflora tigrina. Finest strain of tigered fls; TP. CALC-9. 30¢
- herdeohybrida. (Perfect Model.) Form of C. crenatiifolia, TP. CALC-10. 40¢
- intergrifolia. Stems woody, fls yellow to red-brown, out-doors; HHP. CALC-11. 50¢
- mexicana. Annual species; small yellow slippers, 1 ft HA. CALC-16. 20¢

CALIFORNIA POPPY: see Eschscholzia.

CALENDULA (kal-LEND-yew-lah) Cool weather plants

Definitely cool weather flowers and in the S should be sown in the fall. They like full sunshine but do not take well to burning sun of summer. In the N start indoors or pr plant in the open as soon as weather is settled. Select the right varieties for out doors or for GH growing. Grow about 2 ft high; all HA.

Following all C. officinalis:

- Amber Glow. Long stem; amber-yellow with dark center. CALN-7A. 15¢
- Apricot Queen. A beautiful apricot color. CALN-7AQ. 15¢
- Ball's Extra Double. Free flowering, bright double orange, GH. CALN-7BD. 20¢
- Ball's Gold. Deep golden yellow, GH. CALN-7BG. 20¢
- Ball's Masterpiece. Clear orange with dark center, GH. CALN-7BM. 20¢
- Ball's White. Soft creamy yellow, double, GH. CALN-7BW. 20¢
- chrysanthia. Large clear buttercup-yellow. CALN-7C. 15¢
- Campfire. Large brilliant orange with lemon sheen, very good. CALN-7CF. 15¢
- Corniche d'Or. Pretty golden yellow. CALN-7CO. 15¢
- Frisled Beauty. Double orange fls with frilled petals. CALN-7FB. 15¢
- Hollandia. Extra double deep orange; long stems; execcnt cut. CALN-7H. 15¢
- Indian Maid. NEW, Pale orange with distinctive maroon eye. CALN-7NM. 15¢
- Jewell. Deep orange, full double, semi-dwarf; fine bedder. CALN-7J. 15¢
- Lemon Queen. Pretty sulphur-yellow; flat head. CALN-7LQ. 15¢
- Mammoth Orange. Best extra large deep orange. CALN-7MG. 15¢
- Market Tangerine. Deep tangerine orange. CALN-7MT. 15¢
- Meteor. Double orange with yellow stripes; different. CALN-7M. 15¢
- Orange King. Florist strain; reselected; double orange; long stems. CALN-7GK. 15¢
- Orange Fantasy. A crested type in orange; different. CALN-7GS. 15¢
- pluvialis. Cape Marigold. Rays white or purple; (Dim. annua) TA. CALN-8. 15¢
- Sunshine. Golden yellow; curled petals; long stems, good for cut fls. CALN-7S. 15¢
- Radio. Double quilled petals; orange-scarlet; pretty. CALN-7R. 15¢
- Radio Golden Beam. Pure golden yellow; curled petals. CALN-7RG. 15¢
- Yellow Colossal. Large Chrysanthia type but more double. CALN-7YC. 15¢
- Florist Varieties Mixed. Oz. 50¢; ¼ lb. \$1.00. CALN-7FX. 15¢
- Mixedd Art Shades. Pastel shades. CALN-7A. 15¢
- Garden Varieties Mixed. Oz. 40¢; ¼ lb. 75¢ CALN-7GX. 15¢

Calla Lily: see Zantedeschia.

CALLIOPSIS (kal-lee-OP-siss) The annuals in Coreopsis

Only the annual sorts are listed here. The perennials will be found under Coreopsis. These are hardy annuals; make fine display in the flower bordr and ar xclnt for cut. These are hary annuals, are easily grown and make bright and cheerful garden flowers. Sow seed early in April where they are to grow and thin to 6 inches if you want a strong growth. There make excellent cut flowers.

DRUMMONDI: Most of the garden sorts belong to this species. Golden Wave. Annuals to 2 ft. flower heads 2 inches across on long stalks; flowers in rays; easy

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Vacciniums

The Vacciniums, commonly called Huckleberries, are quite plentiful here in our mountains. When the berries are ripe they are harvested by the thousands of quarts and sold on the markets through out the East. They are to be found in various heights from a low creeper to 24 inches and comes in shades of light blue-gray, dark blue and black. I'm also informed that there are white berried ones; I have made a search for this the past season, without any success, I now have the promise of an old timer in the berry picking business, that he will take me to where they can be found. Another interesting one is Vaccinium stamineum, commonly called Squaw-berry hereabouts, it goes by the name, also, of Hog Huckleberry. This is nice in flower and rather showy in fruit although the berries are not good to eat. I grow a number of the dwarfed ones of these Vacciniums in my various gardens and they make nice little plants to grow among other heaths or by themselves, the fruits gets larger under cultivation, too,

By Alton Camp, Pa.

White Berried Vaccinium

November 24, 1950

Regarding my success in finding the white berried Vaccinium, I am happy to advise you, that I did find a small colony of this species. I brought home a few plants and gathered a small amount of seed. The plants survived the moving and are nicely established for next season. These plants attain a height of about 12-16 inches and increase by the roots branching out and sending up new plants. The fruit is fair size and very sweet to taste and a fully loaded bush is a very pretty sight to see.

I understand there is another type to be found more dwarf than this one, and the berries ripen a little earlier. This one has its fruits ripen about the middle of August.

I expect to tract down the dwarfed one next season, whether I will be able to locate it, will have to await that time.

I would like to mention another item of interest we have been growing locally. Solidago odora; hereabouts, it goes by the name of Mountain Tea. The foliage is collected and dried and a grand tea is brewed from it.

There was a time when it was quite plentiful, but deer and men have depleted it. and therefore I have started a nice bed of it here at my home. I am enclosing a small amount of dried leaves for you to try, should be enough for two cups. Bring that much water to a boil and put the tea in it, continue to boil for about a minute or two, remove from heat, put a lid on the pan and allow to cool a little, strain and add sugar to taste.

There was a time when many of the inhabitants here had nothing else to drink than this.

By Alton Camp, Penn.

Silene lacinata Wanted

Trevor Jukes writing in the Alpine Garden Society bulletin recently remarks that the "best new plant that I added to my garden last year is *Silene lacinata* from California. With me it grew about 9 inches high with flowers of a delightful pastel pink.

Altogether it is a plant to be recommended, as good pinks and reds are rare in the rock garden."

We would like to hear from American gardeners who have grown this native *Silene*.

CANTERBURY BELLS-CAPSICUM

CALLIOPSIS Continued from page 14.

—Gold Crest. Crested heads golden yellow, HA.....	CALP-7GC.	15¢
—Golden Wave. Pure yellow with dark brown center; pretty.....	CALP-7GW.	15¢
—Semi-dwarf, Mixed. Plants 2-2½ ft, in all colors.....	CALP-7DX.	15¢
—Tall Varieties Mixed. Double and semi-double fls fine garde strain.....	CALP-7TX.	15¢
—bicolor marmorata. Bright golden marbled with wallflower-red.....	CALP-25M.	15¢
—Crimson King. Dwarf; red flowers.....	CALP-7CK.	15¢
—Golden Ray. Dark purplish brown center; broad golden petals; dw.....	CALP-7GR.	15¢
—nigra speciosa. Quaint reddish maroon flowers.....	CALP-7N.	15¢
—Dwarf Goblin. Noval mixture, 6-in. plants in pleasing bicolors.....	CALP-7DG.	15¢

TINCTORIA: These showy border plants, fine for cutting; rays yellow, crimson-brown at base and disk brownish purple; HHA, 1-2½ ft.

—Dwarf Gold and Crimson.....	CALP-6GC.	15¢
—Dwarf Sulphur. A pretty light yellow.....	CALP-6DS.	15¢
—Beauty. Compact, dwarf, golden fls, crimson center; 9 in.....	CALP-6B.	15¢
—bicolor. Yellow and brown fls; 2 ft.....	CALP-6CB.	15¢
—Dazzler. In rich brilliant colors; 9 inches.....	CALP-6D.	15¢
—Golden Sovereign. A NEW English novelty rich golden; 9 in.....	CALP-6GS.	20¢
—Lemon Queen. Tall lemon-yellow, red zone; cutting; 2½ ft.....	CALP-6LQ.	15¢
—nucensis. Lge fld species 2 ft; yellow rayed dark lined; 2½ in. ac.....	CALP-18.	15¢
—Star of Fire. A mass of Cactus-shaped fiery red fls; 9 in.....	CALP-6SF.	15¢
—The Garnet. A multitude of crimson-scarlet fls; 1½ ft.....	CALP-6G.	15¢
—Tiger Star. Rich bronze, striped and mottled yellow, 1 ft; pretty.....	CALP-6TS.	15¢
—Mixed Tinctoria Varieties.....	CALP-6X.	15¢
—Calliopsis Blend. A blend of all the annual sorts.....	CALP-X.	15¢

CALLISTEPHUS: see Asters.

CALLIRHOE (kal-LIHR-oh-ee) Poppy-mallow

Poppy Mallow. N. A. annuals and perennials, picturesque lobed foliage and showy flowers in pink, red or reddish purple, long in bloom; thrives in poor and dry soils.

—involuta. Wine Cup. Claret-crimson, cup-shape; June-Sept; 30 in; HPCALL-2. 20¢

CALLUNA (kal-LEW-nuh) Heather

The true hardy Heathers, they are adapted to cover dry sunny slopes; lime free soil.

—vulgaris. Rosy pink fls, 2 ft; in late summer HP.....	CALL-1.	30¢
—alba. The best white variety.....	CALL-1W.	30¢
—St. Patrick. Red-brown fol; 4-6 in tall; Aug-Sept.....	CALL-1S.	40¢

CALOCHORTUS (kaloh-KORT-us) Mariposa-lily, Globe Tulip

W. Am. plants of Lily F. forming corm and bearing bell-shaped lilac, yellow or white flowers. They are known under the names Mariposa Tulips, Butterfly Tulips, Globe and Star Tulips, Sego Lily and Fairy Lanterns. Of great beauty; hardy in the N but should be protected against winter heaving. Sunny places; light soil; well drained; raised beds should be ideal; handle bulbs much as you would Tulips.

—albus. Fls white, purplish at base; 2 ft tall; HP.....	CALO-2.	20¢
—concolor.....	CALO-12.	30¢
—Dunnii.....	CALO-14.	30¢
—hybrid. A possible hybrid of C. concolor and Weedii.....	CALO-21.	25¢
—macrocarpus. Lavender; 10 in. tall; June-July HP.....	CALO-25.	25¢
—Maeveanus. Best of genus; lavender RG; 4 in early spring; HP.....	CALO-26.	30¢
—Weedii. Yellow dotted with orange-brown; 2 ft; HP.....	CALO-46.	25¢
—Calochortus Blend.....	CALO-X.	20¢

CALPURNIA (kal-PUR-ne-ah)

Trees and shrubs; flowers in racemes, native of S. Af. and grown out doors in S and GH in N. They are ornamental.

—aurea. Af. Laburnum. 15 ft; yellow fls..... CALU-1. | 30¢ |

CALTHA (KALTH-ah) Crowfoot Family

Small succulent perennials thriving in marsh land near running water but can be grown in moist sections of the garden. They are especially nice near water gardens blooming in the spring and often again in the fall. Long lasting when cut.

—biflora. White buttercups; RG or bogs, in full sun, HP.....	CALT-1.	30¢
—pulustris alba. Rare pure white form; 2 ft; HP.....	CALT-5A.	40¢
—leptosepala. Similiar to C. bicolor; 4 inches high; HP.....	CALT-4.	25¢

CAMASSIA ka-MASS-ee-ah) Camass

N. Am. bulbous plants of the Lily Family. Blue and white flowers in graceful racemes and narrow grass-like foliage. Perfectly hardy; plant in groups.

—esculenta. Erect spikes of pale blue; cuts; 2 ft; HP.....	CAMA-3.	25¢
—Leichtlinii. Pretty purple to creamy white; 1½-2 ft; HP.....	CAMA-6.	25¢
—Quamash. Blue fls; 18 in. tall; May; fine.....	CAMA-7.	20¢

CAMPANULA (kam-PAN-yew-lah) Bellflower, Canterbury Bells

(kam-PAN-u-lah) Canterbury Bells; Bell Flowers; Harebell. Biennials, perennials and a few annuals. They are excellent for the border, some species for the rock garden and all make good cut flowers. All the biennials and perennials can be started from seed, sown indoors in March and set outdoors in May or June or they can be started about July. A covering of leaves is good for winter protection. The seed being small, it will be well to scatter them on a good light loam, press into the soil lightly and cover.

MEDIUM: Canterbury Bells; Single, 3 ft; June-July; HB

Canterbury Bells. (C. medium). Biennials, flower June-July; 3 ft; HB.

—Blue.....	CAMP-1B.	15¢
—Lilac.....	CAMP-1L.	15¢
—Rose.....	CAMP-1Z.	15¢
Blend of above colors.....	CAMP-1X.	15¢

DOUBLE FLOWERED CANTEBURY BELLS: 2½ ft; HB.

Rose.....	CAMP-2Z.	15½¢
White.....	CAMP-2W.	15¢
Blue.....	CAMP-2B.	15¢
Dean's Hybrids. Double and Single.....	CAMP-2XD.	20¢
Blend of all colors.....	CAMP-2X.	15¢

CALYCANTHEMA: Cup and Saucer; 2½ ft; HB

calycanthema, White.....	CAMP-3W.	15¢
—Blue Sky blue; single.....	CAMP-3B.	15¢
—Rose.....	CAMP-3Z.	15¢
—Lilac.....	CAMP-3L.	15¢
—Double and Single, Mixed.....	CAMP-3XD.	15¢
—Blend of all colors and shades.....	CAMP-3X.	15¢

Campanula Species:

barbata. Distinct, pretty, porcelain blue; 1 ft; HP..... CAMP-13. | 25¢ |

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Cypomandia betacea

By D. Todd Gresham

A small tree up to 12 ft. high; wood pithy. Tender, will not stand any frost. Leaves cordate, about 12 inches long, slightly hairy and soft. Aphides consider them a special treat.

The leaves when handled have a slightly disagreeable odor, but this is not noticeable unless handled.

The flowers come in clusters, creamy white in color, slightly fragrant, about half an inch across. The fruit is egg-shaped except that both ends are pointed, about 3 inches long deep maroon-red. The flavor is slightly acid and not unpleasant, but difficult to describe. It makes a fine jelly with a flavor described by a friend as a blend of pineapple and watermelon. The plant grows easily from seed or cuttings, but trees grown from seed make a straighter trunk tree. It grows fast and will bear fruit the 3rd year.

Cypomandia (lump-plant, for its hump-shaped anthers. Betacea means beet-like for the color of the fruit).

Grow them as you would egg plant. They grow outdoors at Santa Cruz, Cal., and we presume would also be outdoor plants in many parts of southern Florida; anyone growing there successfully, please advise us.



TULIPS IN BLOOM AT OUR SEED FARM

The Tulips growing in these beds were from surplus stock and were planted during the last week in January! The soil was frozen as could be expected here in Michigan in the month of January. The soil in these beds is a muck soil and at time of planting was frozen at least 3 inches.

The beds were marked off in 5 foot widths and the bulbs merely POURED from the bags and then thinned out with the handle of a hoe. For covering a trench about 3 feet wide was dug, two feet deep and this soil placed on top of bulbs; this made a soil covering of about 3 inches. On top of this and also in the trenches, a covering of bean pods was placed, which was at least 2 feet deep. In the spring when growth started this was raked off some. These pods kept the soil from freezing hard, thus allowing a root growth to start. At such a late planting time one would expect a near failure but the flowerers will indicate how successful it was.

The Daffodils bloomed in time for Mother's Day and the Tulips for Decoration Day! The old gentleman admiring the flowers is Mr. Ireland, one of our employees. He is 79 years of age and can accomplish more than 3 younger men. He is one of the vanishing Americans and refuses to accept "old age aid" - more about him again.

GARDEN NEEDS

MILLED SPHAGNUM MOSS

A finemilled grade of high class Sphagnum especially for the germination of flower seed.

It come in one bushel bags and weighs as much as 12 lbs in some bags.

PRICE: Per bag, prepaid by parcel post, for \$2.25 per bag.

VERMICULITE

Special for seed beds, for cuttings or for mixing in potting soil. It comes in three sized paper bags; the small size will take care of the germination needs of the small grower.

PRICES: 4 qt. bags, 55¢; ½ bushel bags, \$1.00; 2 bushel bags, \$2.45, prepaid by mail.

FERTO-POTS

These are organic pots which can be set in the ground with plants; they retain the moisture add plant food to the soil and pushes the seedling along for a quick start.

They come in three sizes, 2 inch 60¢ per doz; 100 for \$2.50; box of 500, \$6.50, prepaid. 2½ inch size, 65¢ per doz.; 100 for \$2.80; 250 for \$3.25; 3 inch size, 80¢ per doz; 250 for \$3.90. All prepaid by parcel post.

POT STAKES

3/8 inches wide, painted white, all prepaid. 4", 50¢ per 100; carton of 1,000 for \$3.50. 5", 55¢ per 100; carton of 1,000 for \$3.65. 6", 60¢ per 100; carton of 1,000 for \$4.00. 10", 70¢ per 100; carton of 500 for \$3.10. **SPECIAL GARDEN STAKES:**

7/8" wide painted white; prepaid 8", \$1.15 per 100; carton of 250 for \$2.70. 1 1/8" wide; painted white; prepaid. These make a fine and cheap garden stake. 12" long; \$1.80 per carton of 100.

COPPER WIRED TREE, SHRUB TAGS: 3½" long, 5/8" wide, for tagging nursery stock or for wired labels for trees and shrubs; painted white.

50¢ per 100; \$4.00 per carton of 1,000.

ACTIVO

2½ lb cans, \$1.00; 7 lb cans \$2.25, prepaid. Pioneer Seed Company - Dimondale, Mich.

SPRING CARE OF THE LILIES.

Much can be written on spring care of the lilies, especially when one is getting paid by the word but practically it is a rather simple subject.

Probably two points will cover the whole subject. First DO NOT dig or hoe the bed, even a slight raking can do harm, especially in plantings several years old. Lily roots are close to the surface but more important is the liability of damaging flowering shoots that are not yet thru the soil. Also in many cases seed or bulbels may be germinating. Therefore always pull up the weeds as they first appear.

Second, and just as important, is to always cover the beds with a mulch, a 2-3 inch mulch is not too much. Lilies like their their heads in the air but their roots cool and shaded.

A good lily planting is in beds that have had the necessary requirements attended to before the bulbs were planted. Drainage probably being the most important. If the bed is at fault in this respect it would be best to form a trench around the bed, so as to drain off the excess water.

If you should be so unfortunate as to have botrytis blight strike your garden, it will be well to go to their aid with the micronized copper sprays, but above all, get busy with your beds so that your lilies will be healthy and more able to resist disease.

Do not use commercial fertilizers on the lily beds.

STARTING CLEMATIS SEEDS.

Normally the seed ripens in late summer or fall and are dispersed by the wind, when they germinate in the spring.

There is some degree of dormancy in Clematis seed and thus it will be best to stratify the seed during the winter in moist sand or peat at about 32-50 degrees for 1-3 months to stimulate its germination.

If seed is then sown in flats inside, kept at a good nite temperature of, say, 65-85 during the day for 50-60 days.

Some lime is beneficial in the seed soil. A rich well drained light loam is the ideal soil.

FORGOTTEN PEOPLE.

Stopping in a book store in Cincinnati recently for books the proprietor called my special attention to a collection of books he had just purchased, the number running into the hundreds. He had just purchased them from the widow of the former owner.

Among the books I purchased from this collection was, 'How to know the Wild Flowers' and written on the inside cover these words: 'Bought with the first money ever earned by me in teaching Botany. Binghamton, N. Y., Sept. 20, 1895'.

The writer did not sign his name, otherwise I would have enjoyed recording it, 55 years after! What changes occur in 55 years! How easily we are forgotten in the course of 55 years!

THE BEAUTIFUL FRANKLINIA

At long last the rarest of native American flowering trees. *Franklinia alata-maha*, is gaining the recognition it so aptly deserves.

Several factors probably can be attributed to this steadily growing acclaim. (1) We Americans are becoming better gardeners, and as our knowledge increases, it naturally follows that appreciation of finer garden adornment also increases. (2) To meet this demand the nurseryman is increasing his production.

Regardless of the season, *Franklinia* carries itself with the sort of distinction which sets it apart. Fifteen years ago, when I saw its sumptuous white cups, filled with their mass of bright orange stamens, spangling the nursery plantation on a Long Island side road, the sight nearly occasioned a wreck. This past fall, walking through the vast lath houses of a large nursery, my pulse quickened at the sight of a block of 300 small plants in brilliant crimson autumn garb. It gave me a feeling of pride that this distinctive American stood with rare exotics of the world, and carried itself with so princely an air that it was impossible not to sense its refinement and charm.

One does not garden many days before learning that plants, like people, have definite likes and dislikes. To achieve the fullest development, plants must be situated in congenial surroundings.

Demands an Acid Soil

Franklinia belongs, in its unswerving demand for a footing in acid soil, with the rhododendrons, azaleas, camellias, vaccinium, shortia, galax, *Epigaea repens*, and others of that select company which refuse to compromise on this point. To attempt its growth in soil with an alkaline reaction is useless, unless one is willing to correct this condition.

If the soil is known to be alkaline, before planting it can be excavated to a depth of 18 to 24 inches, and the resulting hole filled with a mixture of two parts hard wood leaf-mold to one part peat moss. The leaf-mold should not be too completely broken down, but rather in a partially decomposed state with some coarse leafage. A suggested alternate mixture could be two parts moss and one part sandy loam.

Another problem which confronts the grower is an unfavorable location or an alkaline water supply. If alkaline, constant watering will eventually neutralize a prepared acid soil.

Mulch with Peat Moss

When *Franklinia* is planted, and it will stand full sun or light shade, a two inch mulch of peat moss should be applied annually around the plant. This acts as a moisture seal, and protects the mass of fine surface roots from drying winds. It goes without saying that *Franklinia*, as with rhododendrons and azaleas, no tools should be used to weed or cultivate; only the fingers when necessary.

While the preceeding paragraphs have stated *Franklinia's* definite demand for an acid soil, it can be grown in an open, well drained soil, by using aluminum sulphate, obtainable at most seed stores. How often aluminum sulphate should be used depends on the degree of alkalinity which must be corrected and the size of plant to be treated. Soil testing kits are avail-

By D. Todd Gresham

able for this purpose.

I have applied, with complete success, one teaspoon of aluminum sulphate per gallon of water, and one teacup of Vigoro

be well to withhold fertilizer after August, and moderate watering, to allow the plant to harden-off and reduce the possibility of damage from freezing.

(NOTE: Mr. Gresham is the best posted grower of this beautiful and rare tree. I



dissolved in four gallons of water, on alternate weeks, over a period of 3 months, to a 4 foot plant practically dead from being in a limey soil.

Today there are several prepared acidulous fertilizers which are good. RAC gives excellent results.

Franklinia has proven hardy on Long Island, New York, and in sheltered spots around Boston. A native of Georgia, and a fall bloomer, by nature it is in active growth late in autumn. In climates where its hardiness is questionable, it would

wonder why Georgians have not long ago taken this native tree as their state flower for no other state has a flower strictly its own. In a former issue we printed the unusual history of this tree and how it was nearly lost entirely. All the trees now known have come from seed from one tree grown in Philadelphia. Harry E. Saier.

Why Not Grow Some Trees Yourself?

SEED: We can furnish seed of the *Franklinia*. The seed is very scarce and hard to get. **PRICE:** 10 seeds, 50¢; 25 seeds, \$1.00; 100 seeds, \$3.75, post paid.

"Our Optimism Sadily Strained"

The publication of a flower magazine like ours, requires a lot of effort, expense and capital, many delays and disappointments and I have wondered many a time if the effort was worth it all, especially in the upside times 25 million people have voted us into.

Regardless of what one would think, the costs are too high and especially is this so in the printing trade. To meet part of this we have installed our own plant, but as we only are printing our own magazine, it has been too expensive to employ a full set of

printers until we actually get started and thus one thing after another has caused delays, so that we have already missed too many issues. However, we have kept to the original plan and now can proceed with an issue each month.

We have received many letters as to why a catalog has not been mailed. Most of these have been considerate; a very few not. It has been difficult to answer these letters and I have been afraid that I might be making ex-

(Continued on page 18)

The New Ballet Queen Asters



The introduction of the variety Ballet Queen two years ago, marked a complete change in the early Queen of the Market class of Asters.

Now this sensational new type can be offered in a full blend of colors. Plants are extremely early, and bear flowers larger than ordinary Queens, with a distinctive crested center.

It is this full center which makes the Ballet type extremely double, much more so than the previous strain. In addition, the Ballet type is extremely wilt-resistant, correcting one of the drawbacks of the old strain. The earliest of all Asters and best for the South. Fine for early market cutting.

Approximately 12,000 seeds per oz.

Pkt. 2¢; Oz. \$1.50; 1/4 lb. \$3.50.

The Dianthus - Hardy Pinks

There are close to 100 species of Dianthus grown in the U.S. and innumerable varieties, probably over 1000. I am not claiming any flower better than another but it will be hard to find a genus that is so easily grown, so easily suited to soil and climate and added to these the fact they take up so little room and fit into any garden, thus the flower grower can make many beautiful selections for increasing his stock.

While this has always been possible we seldom hear of Dianthus fans as we do of the Lilies, Penstemons and other flowers.

Dianthus Are Easily Grown

Dianthus are all easily grown from seed, except, of course, some of the hybrids that do not produce seed. They have to be increased by cuttings which can be easily done, but must be taken from non-flowering shoots, in spring or autumn. Layering is also easily done with Dianthus and on the smaller cushion types divisions are easily taken.

In planting seeds of Dianthus, sow as usual. There are no special rules for them. They germinate best in the dark, that is the seed bed should not be exposed to the sun but covered with something or if possible placed in the darker part of the room. If sown in seed pans or pots, water from below and try to keep the degree of moisture fairly constant.

Fresh seed of the larger Dianthus germinate in about 3 weeks but in the alpine species I have known seeds to remain in the seed pan a year before germinating. In some species, especially those native of the high mountains, germination can be hastened by exposing the seed pan to frost and then removing it after 2-3 weeks of this treatment, to a warmer location.

Seed Can Be Sown Any Time

Never let seedlings get crowded, the thicker your stand the sooner they will have to be transplanted.

Seed can be planted just about any time of the year, that is best suited to the grower, another advantage.

I might add here, too, that it is difficult to secure most of the Dianthus species

true to type or named variety unless pains are taken to keep them from cross pollinating. This is often very difficult and if many different kinds are grown close together. For a few years now we have been growing more and more species and selections of Dianthus, all with the object of producing seeds as near true to type as is possible to raise them; we will also be able to offer plants, which you will find listed in future issues. There will also be many additions to our present list and as soon as sufficient stock is grown to make it possible to offer them. We are always pleased to hear of growers who are making a specialty of Dianthus.

Dianthus, as a rule, likes a warm sunny position and nearly all kinds require lime in the soil.

Another very important point about soil is that many of the species whose native soils are poor and rocky, should be grown on similar soil or shall we say they should not be planted in rich soil, for they only grow rank and sprawl all over the ground and produce few if any flowers.

Trim Back Dianthus Plants

I also find it best to give my plants a 'hair cut' in the fall or spring, especially cutting back long lanky stems. Most plants, whether the tall ones or the dwarf tufted types, are benefited by shearing the foliage back. In the fall and also spring I find it also good to scatter a layer of fine gravel under my plants; it keeps them from rotting and makes an ideal foundation for the leaves, preventing that too damp condition so often encountered in the late fall or early spring.

The gardener who can grow his Dianthus on raised beds, as we do ourselves, will find it more satisfactory and sure to have live plants in the spring for no Dianthus will tolerate wet feet.

Never mulch a Dianthus plant, not on its top, it will only rot the foliage and does no good. If you wish to avoid heaving in the winter, a fine mulch between the plants will help, but never get it on the plants themselves.

By Harry E. Saier.

OPTIMISM STRAINED

(Continued from Page 17)

cuses that would appear childish, but in this month's of MY GARDEN, an English publication, edited by Theo. A. Stephens, has an editorial that hits us exactly and I am taking the liberty of quoting it and trust this will be all right with Mr. Stephens. I quote:

"Optimism, tempered by a degree of caution acquired very largely during a five-year period in Yorkshire early in my business career, has been one of my asset in life. In recent months, however, my optimism has been sadly strained.

I always think that the period between Christmas and Easter is a time when our spirits are more inclined to droop than at any other; it is like the time between three and five o'clock in the morning, when vitality is lowest, and this year the weather has added to every other trouble. Rising costs, which I mentioned before, frustrations on every hand and the general worries of running a business today began to get me down and I started to ask myself whether it was all worth while. I argued that I had done my share of the world's work and that there was really no need for me to go on striving; but, though the arguments appeared to gain ground with my material self, my inner conscience told me that the truth was not in them.

On a recent dull and dreary morning, after lying awake for some hours turning things over in my mind, I walked round my garden at home. The Snowdrops glorious as they would have been in brilliant sunshine, several of the Saxifrages were throwing up their delicious little flowers and the Daffodils were all thrusting up their flower buds with some of them showing color, all ignoring the gloom and carrying on with their job of bringing beauty to a troubled and dreary world.

I drove over from my home to our office here through dense fog, but already the fog was lifting from my soul. When I went through the mail that morning there were a number of quite extraordinary letters. . . . My doubts and perplexities melted like snow in May and, though all the difficulties remained, my path lay clear before me - which was to go straight ahead, dealing with problems as they arose, and to do everything which lay within my power to carry on as before. We are all in the same boat, we all have our difficulties, and the problems of today are not just peculiar to any limited section of this country, or indeed of any other country, but are both nation wide and world wide."

Mr. Stephens then goes on about the increasing costs and the solutions, of which he admits are far from solution.

Every word he says can exactly fit my own condition. I, too, lay awake at night trying to figure out the problems for the next day and I, too, walk in the garden and have that how happy the Puschkinias are even in the snow and how busy the Robins and Cardinals are with their coming season's operations and so another day passes but the same problems for us repeat themselves day after day.

I hope that our Garden Magazine gives you not only much pleasure but will also supply you with helpful information as well. Your subscription will go far in making this possible.

H. E. S.
CORRECTION!!! With an short staff and the hurry to complete the printing the word "sadly" in the heading was set incorrectly and it being run at night the entire run was printed. Have patience, dear reader, we soon will have the new plant in control.

Annual Chrysanthemum

The Chrysanthemum carinatum, or annuums, make excellent plants for cutflowers and are easy to grow.

If you wish to cut the flowers it might be best to grow these in rows in the garden. Put in just a few radish seed to mark the rows for early cultivation.

Sow the seed early in the spring, in fact two or three planting can be made a week apart for a longer supply of flowers.

They come in a wide range of colors, all with a dark eye and they can be made up in an endless number of ways.

Packet 15¢; Oz. 40¢; ¼ lb. \$1.25; prepaid.



The Botanical Society of South Africa

The journal of the Society for 1949 has been received. It contains, besides the Society's annual report, four articles and 'news and notes'.

There are at present 2200 members and it seems that higher and higher expense bills is bothering them as it does us.

The forth coming book, "The Aloes of South Africa" is announced. It is highly recommended and it is expected to 'make botanical history'. Anyone wishing to subscribe for one of the 500 copies to be published can have detailed information by writing us.

'A trip for Horticultural Societies' discusses show plans, etc. 'Joseph William Mathews' is a tribute to the first curator of Kirstenbosch. He is responsible for the formation of the botanical gardens and was an active person in horticultural matters in South Africa. He died in 1949.

'The Wilds' tell of one of the recently developed gardens. It is located about 2 miles north of Johannesburg and consists of 45 acres. We will be pleased to publish more of the 'doings' in South Africa and always glad to send copies of our magazine to interested people and we will have to depend upon present subscribers for their names and addresses.

Fire in Seed Germination

Many seeds have such hard coats that extraordinary treatment is necessary before they germinate. Frost is the most common but there are many cases where fire is also of benefit. It has long been noticed that after land has been burned over, many plants spring up, that on adjacent land not burned over, there are no signs of them.

This is particularly noticeable in the Ceanothus, Matilija shrub poppy, the Eucalyptus, many conifers, etc. The heat of the fire breaks the hard shell and allows water to enter, resulting in germination.

This is accomplished by the gardener by covering the seed with an inch of soil and then burning a light fire on it; after cooling remove part of the soil when germination will begin. There is an easier method that can be used to accomplish the same result. This is what is known as the hot water treatment. Usually it amounts only in dipping the seed in a pan of boiling hot water leaving it until the water has cooled when it is planted.

CARDUUS - CASSIA - CEANOTHUS

CAMPANULA continued from page 15.

carpatica. Blooms all summer, erect fls, blue; July-Aug; 1 ft; HP	CAMP-20	15¢
—turbinata. Erect cup-like, light blue fls, neat RG; 6"; HP	CAMP-20T	25¢
—White. Pure white; single	CAMP-20W	15¢
collina. Deep blue fls, neat dwarf RG, 8"; HP	CAMP-25	25¢
drabifolia. 6 inch annual, fls blue with white tube, HB	CAMP-29	30¢
Elatinus v. garganica. Trailing species, blue fls, very nice, HP	CAMP-30G	25¢
Formanekiana. Erect, large showy white fls; lvs silver-gray, 8", HP	CAMP-37	25¢
fragilis. Tr. fine for hanging baskets; fls blue, white centers, 16", HP	CAMP-38	25¢
glomerata. Blue or white, in dense clusters; 2 ft; HP	CAMP-39	30¢
incurva. White strain, erect, RG	CAMP-42W	30¢
latifolia. Very large blue fls; excellent; 3 ft; HP	CAMP-51	20¢
—alba. A white form of above	CAMP-51W	20¢
—macrantha. Large deep violet fls; showy in border; 2 ft; HP	CAMP-51M	20¢
longestyla. Large nodding blue-purple fls; 18"; HB	CAMP-57	25¢
persicifolia. Large blue fls; very pretty; 3 ft; HP	CAMP-71	20¢
—Ladham's Strain. Giant flowered strain	CAMP-71L	25¢
—Princess Royal. Deep blue variety	CAMP-71R	25¢
—alba. Pretty white form of above; HP	CAMP-71W	20¢
Poscharskyana. Lovely pale blue s; July, 4"; HP	CAMP-78	25¢
punctata. Many fls, white, spotted inside, 2 ft; HP	CAMP-86	25¢
pyramidalis. (Chimney Bellflower). Fine for border; pale blue; 3 ft; HP	CAMP-87	20¢
rapunculoides. Vigorous persistent invading sp; fls violet-blue; 3 ft; HP	CAMP-95	25¢
Rock Garden Sorts. Low growing types	CAMP-100	25¢
Rapunculus. Lilac-blue fls in narrow racemes, 3 ft; HB	CAMP-96	15¢
rofundifolia. (Harebell) Slender, graceful habit; fls pale blue; 1½ ft HP	CAMP-99	15¢
—superba. Large flowered strain; 2 ft; HP	CAMP-99S	20¢
—Olympic. Large beautiful deep lavender fls; 2 ft; HP	CAMP-99P	20¢
thyrsoides. Erect, very leafy; fls yellowish, in spikes; 2 ft; HB	CAMP-121	25¢
Tommasiniana. Fls nodding, violet; stem not upright; 1 ft; HP	CAMP-122	20¢
Trachelium. Blue-purple fls, nodding, in loose racemes; 3 ft; HP	CAMP-124	45¢
—trachelium album. White nodding fls in loose racemes; 3 ft; HP	CAMP-124W	30¢
sarmatica. Very distinct dwarf sp; erect, violet nodding fls; 1-2 ft; HP	CAMP-103	25¢
Sartori. Fls white, narrow bell-shaped; 10"; HP	CAMP-104	25¢

CANDYTUFT: See Iberis.

CANNA (KAN-noh)

Tropical summer flowering plants growing from thick fleshy tuber-like roots. Valued for both their tropical appearing foliage and their brilliant flowers. Range from 2-10 ft. tall and should be grown as an annual in the N. File notch in seed and soak in warm water over night; start early in spring.

C. FLACCIDA: The commonly grown foliage plant.

—Crozy. Dark leaved sorts in vivid pink, red, yellow and orange; TP	CANA-1C	20¢
—New Giant Hybrids. A Holland strain in several colors	CANA-1H	20¢
—Mixed. All strains mixed	CANA-1X	20¢

CAPSICUM (KAP-se-kum) Pepper

Under this are listed mainly the ornamental peppers. They are grown mainly as pot plants; require warm temperature, sun and fairly rich soil.

—Little Gem. Small garnet colored fruits; pot plant	CAPS-1G	25¢
—Prince of Orange. Small orange colored fruits; pot plant	CAPS-1P	25¢
—Tom Thumb. Small plant with miniature red fruits	CAPS-1T	25¢
—Miniature, Mixed. Small plants mixed varieties	CAPS-1MX	25¢
—Blend. All types and varieties	CAPS-X	20¢

CARICA (KAY-rik-ah) Papaya

Tropical trees with melon-like fruits; grown only in the far South.

—cundinamaricensis. Collected in Columbia	CARI-2	30¢
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CARDIOSPERMUM (kar-ee-oh-SPERM-um) Heart-seed

Hardy annual and perennial vines excellent for covering fences or trellises; grow to 10 feet. The seed pods are inflated like balloons. Best to sow seed where they are to grow or start indoors; light soil and sheltered spot best.

—Halicacabum. Balloon vine. Soak seed, they require to 40 days to germ	CARD-3	20¢
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CARDUUS. (KAHR-deu-us) Plumeless Thistle, Silybum.

Vigorous, robust, spiny-leaved annual and perennial plants with purple tubular flowers, very striking in both flowers and foliage, some being very ornamental. Grows well in ordinary soil.

—benedictus. Blessed Thistle. Lge. yellow heads; sow April; 2 ft, HA	CDUS-2	20¢
—Marianum. (Silybum Marianum) White fls; 4 ft; HA	CDUS-3	20¢

CARNATIONS: see Dianthus caryophyllus.

CARTHAMUS. (KAHR-tha-mus) Bastard Saffron, Safflower.

Spiny leaved annuals; flower heads purplish, yellow or white, making ornamental clumps in the border.

—tinctorius. Produces 2 dyes; orange heads; sow seeds in April; 3 ft; HA	CATH-3	20¢
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CASSIA. (KASH-ah) Senna.

All are sun lovers and best in a sandy loam soil; very attractive with their finely cut foliage and showy flowers. Woody species are greenhouse plants in the North. The herbaceous kinds may be grown in the border.

—artemisioides. Wormwood. Sh. silky gray lvs; fls sulphur-yel; TA	CASS-2	25¢
—fasciculata. Partridge Pea. Easy, golden yellow flaked crimson 18", HHA	CASS-11	20¢
—laevigata. Ornamental shrub; pretty yellow fls; 6'; TP	CASS-18	20¢
—marilandica. Wild Senna. Massive racemes yellow fls; July-Sept; 5' HA	CASS-19	20¢
—nodosa. Jointwood. Tree to 50'; for the South; TP	CASS-26	30¢

CASTILLEJA. (kas-til-EE-yah) Painted Cup, Canadian Paint Brush.

Rare, due mainly to difficulty in growing; do not transplant easily. They are showy annuals, biennials and perennials, native to our West.

—miniata. Fl-bracts tipped brick-red, fls green edged red; 3'; HP	CAST-19	30¢
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CATANANCHE. (kat-ah-NAN-kee) Cupid's Darts.

Herbaceous hardy annuals and perennials, long stalked blue or yellow heads of ray and disk fls; hardy perennials.

—caerulea. Everlastings; bloom first year; blue ray-fls; June-Aug; 2' HP	CATA-1	20¢
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CEANOTHUS. (see-ah-NOH-thus).

Shrubs and small trees of the Pacific Coast and not hardy in northern states. Have pretty small white, blue or pink flowers in dense panicles. Best in a sunny sheltered place in well drained light soil. Plants can be dug in the fall and wintered over in

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Ramona Giants-Super Dwarfs



Many years breeding for the ideal pot plant Dwarf Giant Petunia, has developed this new blended strain which we believe has met the strict habit requirements of discriminating professional growers. **Super-Dwarfs** is a controlled blend of dark shades, orchid shades and bicolors in proper proportion to most market requirements.

Plant habit is extremely dwarf, more so than the regular Ramana Strain. The flowers are of giant size, excellent substance, ruffled but not fringed.

All of the giant Petunias, including the doubles and heavily ruffled type are best as pot plants, in baskets or window boxes, etc. as the flowers are heavy. They are beautiful beyond description.

Approximately 16,000 seed per oz.

Large Packet 75¢; 1/16 Oz. \$1.50.

CELOSIA CRISTATA-COCKSCOMB

Centaurea: Continued from page 20.
a frost proof house.

- austromontanus.** Evergreen; fls blue; 8'; TP.....CEAN-4. 25¢
- crassifolius.** Shrub, fls white, 6'; very pretty lvs; TP.....CEAN-8. 25¢
- cyaneus.** San Diego Lilac. Sh, dark blue fls; May-June; showy, 10'.....CEAN-10. 20¢
- integerrimus.** Deer Brush. Fls white, 12'; HHP.....CEAN-21. 20¢
- pumilus.** Prostrate sh; 8"; fls blue-white; Ore; HHP.....CEAN-36. 40¢
- lomentosus olivaceum.**.....CEAN-47. 20¢
- verrucosus.** Low sh; covered with clouds of small fls; S. Cal.....CEAN-50. 20¢
- prostratus.** Mahala Mat. Prostrate, everg'n, blue to white; RG; HHP.....CEAN-35. 40¢

CELOSIA. (se-LOH-shi-ah) Cockscumb, Chinese Woolflower.

Popular annuals, all easily grown from seed which are best started indoors early in the spring. They grow best in a rich soil with plenty of moisture. The garden types are *C. argentea*.

CRISTATA or COCKSCOMB:

Dwarf Varieties: About 4-8" tall with large showy combs; they are use mainly in beds or pots. TA.

- aurea.** Dark golden yellow combs.....CLOS-2A. 20¢
- Empress.** Dark velvety crimson-maroon combs; 12" plants.....CLOS-2E. 20¢
- President Thiers.** Velvety crimson combs, green fol; 10".....CLOS-2T. 20¢
- Rose Beauty.** Soft rose colored combs.....CLOS-2R. 20¢

TALL VARIETIES: Grows 2-3 feet tall and used for beds, cutting or the border.

- Crimson.** Bright crimson combs; 18".....CLOS-3C. 15¢
- Royal Velvet.** Rich carmine-crimson, bronze foliage reddish margins.....CLOS-3R. 15¢
- Blend Tall Cockscombs.** Above sorts.....CLOS-3X. 15¢

GILBERT HYBRID COCKSCOMB: The Gilbert Strain is especially good for cutting, beds and as dried flowers, they hold their color very long. The colors are in extra good color combinations.

- Green Gold.** Ball-shaped heads, silvery green to flush rose, 30".....CLOS-5G. 25¢
- Harlequin.** Pink, tipped gold changing to salmon; fine for pots; 18".....CLOS-5H. 25¢
- Maple Gold.** Ball-shape; pink tipped with gold; lvs green; 3'.....CLOS-5M. 25¢
- Rose Beauty.** Large ball-shaped combs; 10-15" ac; rose-pink 3-4'.....CLOS-5R. 25¢
- Gilbert Blend.** Above varieties equally mixed.....CLOS-5X. 25¢

PLUMOSA or FEATHERED CELOSIA: Tall feathery spikes in various colors; the plumes are very showy and excellent for both cutting or bedding.

- Golden Plume.** Bright golden yellow; 3 ft.....CLOS-6G. 20¢
- Pride of Castle Gould.** Large fluffy scarlet-crimson plumes, 3 ft.....CLOS-6P. 20¢
- Scarlet Plume.** Brilliant scarlet, fine, 3 ft.....CLOS-6S. 20¢
- Tango.** Showy terra-cotta; fine contrast in beds, 3 ft.....CLOS-6T. 20¢
- Fire Plume.** Red foliage; fire-scarlet plumes; 3 ft.....CLOS-6F. 20¢
- Thompson magnifica, Mixed.** Large bright flashy strain; 3 ft.....CLOS-6M. 20¢
- Triumph of the Exhibition, Mixed.** Showy strain; 2 1/2 ft.....CLOS-6E. 20¢
- Yellow.** Golden yellow plumes of above strain.....CLOS-6Y. 20¢
- Fiery Feather.** Dwarf Florist Strain. Bright scarlet, uniform, 1 ft.....CLOS-6R. 25¢
- Mixed.** Mixture of all the above varieties.....CLOS-6X. 15¢

CELMISIA. (kla-MIS-ah) Compositae.

Perennial plants of New Zealand and Australia; large solitary heads of pure white ray or disk flowers. Can be planted on the Pacific Coast.

- ceriacea Monroii.** Striking with silvery fol; lge white fls; 1 1/2'; HHP.....CELM-1. 50¢
- longifolia.** Very hardy mt. daisy; white tipped pink; 6"; HP.....CLEM-5. 50¢

CENTAUREA. (sen-tau-REE-ah) Compositae.

Herbaceous annuals and perennials. There are many species, all of which have garden value, blooming from June to frost. Annuals are hardy; plant early.

C. cyanus: The common garden kinds belong to this species. *These are the common

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Our READERS' COLUMN

GRINDELIA SQUARROSA

Seed were sown April 4, 1947, germinated readily, plants made rapid growth but failed to bloom that year.

In early June 1948 the plants were 24" high with a six inch spread and were literally smothered with small yellow rayed flowers which were very attractive, lasting well when cut. Bloomed continuously from early June till September.

Britton and Brown give it a western range the common name there is "sticky heads", as entire plant is sticky to touch. Self-seeds readily, young plants living thru the winter.

By Mrs. J. Robert Chrismon, N. C.

(Editor Note: Articles similar to this are especially of interest as they give the actual experience of the grower. What experience did you have with a new plant?)

USING VERMICULITE IN PENN

I used seven pound bags of Vermiculite last year for hybrid rose seed which was good for indoors but not for outside. Pelting rains pack it and also if put on the soil surface after transplanting, it will shed the water like a duck's back as any flaked mineral would do.

I have this past winter, stored my separate crosses (pods and hips) in sphagnum and they came thru fine and the immature pods ripened in cave (in sphagnum) without rotting.

I now remove my seedlings (rose) as soon as visible when stored food is not yet spent and have 100% success if shaded properly. I like your paper very much. Jos. F. Reiss, Pa.

METHOD IN GERMINATING BEGONIAS

Make a small flat from window screen, galvanized preferred, by cutting in diagonally oneinch from the corners of a square of the screen and folding up the cut edges to form sides. Place a thin layer of course Vermiculite in the bottom and over it place a thin layer of a finely screened mixture of peat and Vermiculite. Sit in a pan of water to become moistened. Sow seed and place the seed pan in a covered casserole (or pan to be covered with glass) add a few drops of water to the casserole. Before covering with the lid BE SURE to wipe it with bleach, formalin or some other good disinfectant used FULL STRENGTH. This prevents any danger of damping off. After seeds germinate you can remove the cover. Do not at any time expose seedlings to direct sunlight.

For heat I use a 25 watt light bulb in a pail or tin of the same diameter as the casserole. This supplies the bottom heat and the casserole provides a self watering device. Transplanting may be done easily by setting the flat in a saucer of water.

By Mary M. Elgood.

COVERING BEDS WITH GRAVEL.

There are many alpine plants that will respond wonderfully to a covering of gravel or small stones on the soil in which they are growing. A layer of half or an inch will do.

Such plants as *Dianthus freyerii*, *D. neglectus*, *D. simulans*, the *Genistas*, *Geraniums*, mossy *Phloxes*, most dwarf *Campanulas*, *Erinus*, *Hypericums* and *Acanthollimons*.

We use a fine gravel and a covering of half inch will prevent weed growth, an added inducement.

CHEIRANTHUS - WALLFLOWER

Cheiranthus: Continued from page 21.

- Bachelor Buttons, Cornflowers or Blue Bottle. Hardy annuals, 2½ ft; fine for cutting
- Black Boy.** Blackish maroon flowers; double.....CENT-1K. 15¢
 - Pinkie.** Deep pink, double flowers; excellent strain.....CENT-1P. 15¢
 - Snowman.** The best pure white; double flowers.....CENT-1W. 15¢
 - Blend of Above Varieties.** A real hand made blend.....CENT-1X. 15¢
- C. CYANUS NANA:** These grow 12" tall making excellent bedding plants or for pots.
- Azure Fairy.** Double light delf-blue, extra double; bushy.....CENT-2Z. 15¢
 - Jubilee Gem.** Dwarf compact, 12", double dark blue; edging or pots.....CENT-2J. 20¢
 - Polar Gem.** A new white variety of Jubilee Gem.....CENT-2P. 20¢
 - Lilac Lady.** A pretty lilac or lavender variety; double.....CENT-2L. 20¢
 - Purple Prince.** Dwarf purple; pretty cut flower.....CENT-2R. 20¢
 - Victoria.** Dwarf, deep blue flowers; double.....CENT-2V. 20¢
 - Mixed Dwarf Varieties.** The above kinds blended.....CENT-2X. 15¢

C. IMPERIALIS: Giant Sweet Sultan. Hybrids between *C. moschata* and it white variety; 4 ft. fragrant; flowers soft thistle-like heads; makes nice border plants and cut; HA.

- graxioza.** Lilac flowers.....CENT-28G. 15¢
- Rose.** Deep pure color strain.....CENT-28Z. 15¢
- White.** Pure white strain.....CENT-28W. 15¢
- Dark Blue.** Excellent for cutting.....CENT-28B. 15¢
- Imperialis Blend.** A hand made blend of colors.....CENT-28X. 15¢

C. MOSCHATA: Sweet Sultan. Fragrant white, yellow or purple solitary flowers, 2" across, beautifully soft and fluffy. Fine for both border or for cutting, hardy annuals.

- The Bride.** Large pure white, charming, 2 ft; HA.....CENT-45D. 15¢
- suaveolens.** Yellow Sweet Sultan, 2½ ft, HA.....CENT-45S. 15¢
- Blue.** A rich blue strain.....CENT-45B. 15¢
- Pink.** A rose-pink strain.....CENT-45P. 15¢
- White.** Pure white heads; needed in cutting.....CENT-45W. 15¢
- Moschata Blend.** Hand made blend of colors for border or cutting.....CENT-45X. 15¢
- americana, Lilac.** Basket Flower. Thistle-like fls; 4-5" ac; HA.....CENT-7L. 15¢
- White.** Pure white fls; July-Sept; HA.....CENT-7W. 15¢

Andrewii. C.....CENT-8. 20¢

Cineraria. Dusty Miller. Silvery lvs; 1' beds or edging; HHP.....CENT-14. 20¢

dealbata, Rose Delight. Mauve-rose; very pretty; 2½'; HP.....CENT-20. 20¢

depressa. Prostrate; blue heads 1½" across; lvs silvery, HP.....CENT-21. 20¢

gymnocarpa. Dusty Miller. Lvs densely white, woolly; 2'; boxes HHP.....CENT-30. 20¢

macrocephala. Enormous double golden fls; 3-4'; July-Aug; HP.....CENT-38. 20¢

montana. Mountain Bluet. Fls 2" ac; brilliant blue; June-Sept; 2-3'; HP.....CENT-45. 20¢

White. Same with white flowers.....CENT-45W. 20¢

ruthenica. Pale 2" yellow fls in heads; border; 3'; HP.....CENT-62. 20¢

Hardy Centaurea Blend. Just the hardy species.....CENT-X. 20¢

CENTRANTHUS. (sen-TRAN-thus) Valerianaceae.

Annuals and perennials growing well from seed in the open border. They have dense terminal clusters.

- macrocephalon, Mixed.** Pretty rose and white fls; 2 ft, HA.....CENS-2. 15¢

CENTROPOGON. (sen-TROP-oh-gon) Lobeliaceae.

Tropical American shrubby plants of a somewhat climbing habit; grow in warm greenhouse. They will make excellent basket plants.

- psittacimorphus.** A species collected in Columbia, TP.....CROP-2. 25¢

CEPHALARIA. (se-fah-LAY-ri-ah).

Annuals and perennials with Scabiosa-like flowers and used in the border and for cutflowers. Colors creamy white and various yellow tints. June-August, ordinary soil.

- tatarica.** Tall robust habit; fls sulphur-yellow, 5'; HP.....CEPH-12. 20¢

CERASTIUM. (se-RAS-ti-um) Mouse-ear. Caryophyllaceae.

These are excellent rock garden or edging plants, easily grown in ordinary soil. Usually mat forming, leaves silvery, with showy star-like flowers in May and June.

- alpinum.** White fls in summer; 6"; RG; HP.....CERS-1. 20¢
- tomentosum.** Snow-in-Summer. Creeping, fol silvery; fls white; RG; HP.....CERS-13. 20¢

CERATOSTIGMA. (ser-ah-toh-STIG-ma) Plumbaginaceae.

Desirable border plants and shrubs blooming late into the fall. They are hardy perennials with shining leaves. Flowers saucer-shape and blue and rose.

- Griffithii.** Low shs; fls blue; Indja; hot dry places; 3-4'; HP.....CERA-1. 30¢

CESTRUM. (SES-trum) Solanaceae.

Trees and shrubs of the North, very ornamental and having red or pink flowers early in the spring before the leaves appear.

- occidentalis.** Sh to 15 ft; fls reddish in clusters, Cal; HP.....CERC-4.....30¢

CHAENACTIS. (kee-NAK-tis) Compositae.

Shrubs and small trees of tropical regions and grown in the greenhouse in the North. They make attractive winter plants with their bright flowers. Cuttings can be taken in February or early March and kept in a warm temperature.

- aurantiacum.** Orange fls; fine cool GH evergreen sh; TP.....CEST-1. 25¢

Western plants with heads of white or yellow flowers easily grown and good border plants. Seeds or divisions.

- Douglasii.** Bride's Bouquet. Fls white; 1-2 ft; June-July; HB.....CHAE-1. 20¢

CHEIRANTHUS. (ky-RAN-thus) Cruciferae.

Perennials, many of which rank amongst the sowiest flowers. The Wallflower belongs to this genus and under the species *Cheiri*. There are some interesting possibilities in this genus as it hybridizes with *Erysimum*. The Siberian Wallflower comes under the latter genus now. They are natives from the Canary Islands to the Himalayas and in the far North are not hardy.

CHEIRI: Wallflower. Sow the seed as early in the spring as is possible that a strong robust will be grown as the success in growing them depends much on a strong plant. Weakly grown plants are sure to die. They are cool weather plants. Treat as biennials.

—**Cloth of Gold.** Popular rich yellow, large flowered, 18"; HHPB.....CHER-1C. 15¢

—**Covent Garden.** Extra blood-red variety; 18"; HHB.....CHER-1V. 5¢

—**Early Wonder.** NEW class of double fls; golden yellow flaked green.....CHER-1W. 15¢

—**Fireball.** New Swiss variety, fiery red, HHB.....CHER-1R. 20¢

—**Giant Goliath.** Dandy forcing variety; dark maroon; HHE.....CHER-1G. 20¢

—**Golden Mascot.** Large flowered golden yellow, very early; HHB.....CHER-1M. 15¢

—**Goliath.** A very beautiful single in maroon; HHB.....CHER-1L. 15¢

—**Golden Monarch.** A rich yellow counterpart of Vulcan; 1'; HHB.....CHER-1D. 15¢

Gaillardia picta Blanket Flower



Blanket Flower.

Large Packet 15¢; ¼ Ounce 40¢; post paid.

GINSENG SEED

The seed has a hard coat and should be sown right after being gathered, which is usually in August or early September. If it is to be planted in the spring the seed must be stratified, that is, put in moist sand or soil where the seed will not dry out and in most cases if this is stored outdoors during the winter, the frost action will also benefit the germinating powers when spring arrives.

For spring sowing the acid treatment is advised and if grown in flats give bottom heat

CUTTINGS OF ALPINE PLANTS

In taking cuttings of such alpine plants as Androsace, Dianthus, Hypericum, Lewisia, Linum, Penstemons, Phlox Sempervivum, Saxifrages, Silenes, etc., the stock must be absolutely fresh and during the growing period.

Use a soft razor blade in taking the cuttings, it is more certain to produce results than the use of the sharpest knife. Place cuttings in sand and do not keep too wet.

NEW ZEALAND FLOWER SEED

The following are some New Zealand seeds just received. As they are in small quantities we list them here and not in the regular flower seed list; only a few packets each are available.

They are all probably tender in the North but should stand the winters at the Ohio River and south.

Packets are 25¢ each, post paid.

ACEPHYLLA Colensoi. 5 ft, perennial.

ANISOTOME aromatica.

CELMISIA coriacea.

—**copalandii.**

—**gramenea.**

—**petiolata.**

—**compacta sessiliflora.**

—**Traversii.**

—**longiflora.**

—**discolor.**

—**spectabilis.**

CLIANTHUS puniceus. (Kaka Beak).

OLEARIA (two species).

GEUM pariflorum.

HELICHRYSUM bellidicoides. Tr. per.

OURISIA caespitosa.

PACHYSTEGIA insignis.

CRASPEDIA uniflora.

RANUNCULUS Layallii. Good.

—**lappaceus.**

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

PIONEER SEED COMPANY
Dimondale, Michigan, U. S. A.

CHRYSANTHEMUM LISTING

CHEIRANTHUS continued from page 21.

- Ivory White. Nearest to white; 18"; HHB.....CHER-1E. 15¢
- Orange Bedder. Rich orange shading to apricot-yellow; 1'; HHB.....CHER-1N. 15¢
- Ruby Gem. Very large and fine ruby-violet; 18"; HHB.....CHER-1R. 15¢
- Scarlet Emperor. The best scarlet; 18"; HHB.....CHER-1S. 15¢
- Vulcan Improved. Rich velvety crimson; 1'; HHB.....CHER-1U. 15¢
- Blend of Above. Hand made blend of varieties.....CHER-X. 15¢

ANNUAL WALLFLOWERS: This strain will flower the first season if started indoors.
—Golden.....CHER-2G. 15¢

DOUBLE WALLFLOWERS: Large double flowered type
—Dark Brown.....CHER-3B. 20¢
—Double Mixed.....CHER-3X. 15¢

CENOPODIUM. (kee-no-POH-di-um) Goosefoot.

Just a few ornamental species and some used for greens and herbs. Easily grown.
—Boitrys. Feathered Geranium Jerusalem Oak. Graceful plumes; 2'; HA.....CHEN-6. 15¢

CHILOPSIS. (ky-LOP-sis) Bignoniaceae.

One deciduous shrub or tree, to 20 feet, native of SW in dry regions; along streams.
—linearis. Desert Willow. Fls trumpet-shape, lilac, terminal racemes.....CHIL-1. 25¢

CHIRONIA. (ky-RON-ne-ah) Gentianaceae.

African plants with pink and purple flowers in cymes; grown in Calif.
—transvalensis. Bright pink on slender stems; marshy ground; 2½'; TA.....CHIN-3. 30¢

CHRYSANTHEMUM. (kris-AN-the-mum) Compositae.

Large genus of annuals and perennials, of which there is a very large number of very pretty ornamentals. They can be divided into five or six classes as follows:

C. CARNATUM: The popular Painted Daisy; plants 2½ ft tall, well branched, flowers 3" across and all with dark eye, surrounded by a narrow yellow ring, then slightly larger scarlet ring followed by the dominant color for the variety. Hardy annuals, best in a sunny location and excelent for mass effect or for cutflowers. Space plants 20".

- atrococcineum. The Sultan; dark purple.....CHRY-1A. 15¢
- Burridgeanum. Pure white petals, zoned brownish red; lge brown disk.....CHRY-1B. 15¢
- Hybrid, Double Fringed. Beautiful English strain of doubles; 2½'.....CHRY-1H. 20¢
- chameleon. Golden chamois, scarlet and yellow zone; 18".....CHRY-1C. 15¢
- Cocarde. White and crimson with yellow ring; pretty.....CHRY-1K. 15¢
- Dunnett's Double Hybrids. Double flowers in various colors.....CHRY-1D. 15¢
- Scarlet.....CHRY-1DS. 15¢
- White.....CHRY-1DW. 15¢
- Golden Yellow.....CHRY-1DY. 15¢
- Eclipse. Shading light yellow to apricot, garnea band, yellow zone.....CHRY-1E. 15¢
- leutium. Yellow flowers.....CHRY-1L. 15¢
- Northern Star. White with dark disk.....CHRY-1N. 15¢
- W. E. Gladstone. Large purple-red flowers.....CHRY-1G. 15¢
- White Queen. Pure white, pale yellow zone; 18".....CHRY-1Q. 15¢
- Single Flowers Mixed.....CHRY-1SX. 15¢
- Double Flowers Mixed.....CHRY-1DX. 15¢
- Merry Mixture. A California grown strain containing all the varieties.....CHRY-1X. 15¢

C. CORONARIUM: Tallest of the hardy annuals and if planted in very rich soil may need staking. Sow seed as early as possible, usually where plants are to grow; thin 1".

- Golden Glory. New English single, deep yellow, central disk same; 3".....CHRY-2G. 20¢
- Golden Gem. Dwarf double; try in pots; 1'; pretty.....CHRY-2M. 20¢
- Golden Crown. Silvery green fol; butter-yellow fls; 2½ ft.....CHRY-2C. 15¢
- Double Yellow.....CHRY-2Y. 15¢
- White.....CHRY-2W. 15¢
- Sulphur Yellow.....CHRY-2S. 15¢
- Double Mixed.....CHRY-2DX. 15¢
- All C. Coronarium Mixed.....CHRY-2X. 15¢

C. SEGETUM: Plant habit similar to C. carinatum, 2½ ft tall. The flowers are 3" across with dark or light eye surrounded by inconspicuous pale yellow disk, then the dominant color of the variety. All hardy annuals; best to sow seed where plants are to grow and as early as possible in the spring; thin to 12-18 inches apart.

- Eastern Star. Bright yellow with dark eye; 1 ft.....CHRY-3S. 15¢
- Eldorado. Deep canary yellow with black center, pretty; 1½ ft.....CHRY-3E. 15¢
- Golden Glow. Double Golden yellow.....CHRY-3L. 15¢
- Goria. Double yellow flowers.....CHRY-3G. 15¢
- White. A white selection of above.....CHRY-3GW. 15¢
- Morning Star. Large yellow with black center; 18".....CHRY-3M. 15¢
- Yellowstone. Double yellow.....CHRY-3T. 15¢
- Zebra. Flowers striped and blotched.....CHRY-3Z. 15¢
- Blend. All the above varieties.....CHRY-3X. 15¢

C. INDICUM: Perennials, 2-3 feet tall with soft foliage and much branched. They are very showy in masses, blooming in five months from seed. Flowers are in heads, very numerous and ½-1 inch across. Plant either early in the spring or later for bloom the following year.

- Double Special Blend. Rich colors, extra choice strain.....CHRY-4DX. 20¢
- Saier's Early Flowering Strain. Very choice single, bright colors.....CHRY-4SX. 25¢

C. COCCINEUM or PYRETHRUM: Fine cutflowers, especially liked by florists. Flowers are in daisy-like heads. If kept cut it will flower into the autumn. Flowers the second year from seed. Space plants not less than 1 ft; hardy perennial.

- aureum, Gold Feather.....CHRY-5AF. 15¢
- Golden Moss. Very dwarf.....CHRY-5AM. 15¢
- Golden Gem. Dwarf type.....CHRY-5AG. 15¢
- Tom Thumb. Very dwarf.....CHRY-5AT. 15¢
- James Kelway. Bright vermilion-red, yellow center.....CHRY-5K. 20¢
- Giant White.....CHRY-5W. 15¢
- Rose.....CHRY-5Z. 15¢
- Pink.....CHRY-5P. 15¢
- Langport Scarlet. Excellent for cutflowers.....CHRY-5L. 15¢
- roseum, Single and Double. Extra strain.....CHRY-5R. 15¢
- Robinsons Giants. Beautiful single cutflower strain.....CHRY-5B. 20¢
- Market Strain. An European double strain for commercial growing.....CHRY-5M. 20¢
- selaginoides. Fern-leaf, golden yellow foliage.....CHRY-5S. 15¢
- Prize Double. Choice cutflower blend.....CHRY-5DX. 20¢
- Florist Single Blend.....CHRY-5SX. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

AMERICAN DAISY.

Centaurea americana. A new novelty cut flower, somewhat resembling the Shasta Daisy Chiffon, this cousin of the well known Bachelor Button is available in either white or lilac.

The flowers are 4" in diameter, borne on long, stout stems. Plants grow 2'-2½' in the midwest, slightly taller on the Pacific Coast.

A summer annual, thriving in the hottest weather. The flowers carry well when cut in the bud, opens in water to a ring of feathery petals. Plant it in your 1951 flower garden. Approximately 8,000 seeds per oz. Large Pkt. 25¢; Ounce 75¢.

A SOUTH RHODESIAN LETTER.

(Mrs. Ingle gathers flower seed for us in Rhodesia and we think our readers will enjoy one of her letters. Mrs. Ingle had the misfortune of losing her husband two years ago, which we mention because it will make some of her remarks clearer; was left with a rather large plantation and the labor problem is also a problem there too!)

Dear Mr. Saier:

Your letter was very welcome and pleased you can use still more flower seeds; plant hunting is such a joy and there is also the financial side of it.

I have given up tobacco growing as I cannot afford a manager's salary. Unless rain comes quickly my maize crop will be a complete failure. Only wish I was strong enough to drive the tractor.

In October the working oxen were still suffering from poverty, a terrible winter grazing and water shortage. I fed the cows and calves the best I could with hay sweetened with molasses, ground sunflower heads, major-das (cattle melons) and later, spineless cactus sliced up to help quench their thirst.

But the oxen had to exist on just herbage. When drought broke at last and my lands just right for ploughing, no petrol!! Then heavy rains all November and December; nearly 22 inches in two months, both small dams broke but the large one held and I am so thankful it is still well filled.

What looked as being a wonderful year for flower seed has now come to naught. Gladiolus Melleri only made one effort, just a solitary flower stalk, no more! and I thot they would be so lovely this season, so no seed was collected. Tragic, isn't it?

There are a few pretty "Spear Heads" of Gladiolus psittacinus var. Rhodesian Flame and such a deep rich color. And one of my lands with black soil gave me such a fascinating picture of an army of very yellow "Parrot's Beak" or G. psittacinus. Why the flowers appeared all in one color this year instead of the usual, I've not the slightest idea.

A tortoise wandered into my house on New Years eve, heavy rains drove it from the brush I suspect. I have never seen one in Rhodesia before and only one down in the Union, so hope the creature would not return to the brush but I was unlucky for it vanished on the third day..

Barbara Ingles

SEEDS WANTED:

Nasturtium (*Tropaelum*) in the following species: *T. pelophorum*, *T. speciosum*, *T. polyphyllum*, *T. minus*, *T. tuberosum*, *T. pentaphyllum*, *T. tricolor*, *T. azureum*, *T. brachyceras*. Either seed or tubers wanted.

Success can not be honestly gained on a forty hour week.

CINERARIA - CLARKIA - CLEMATIS

Chrysanthemum: Continued from page 22.

—Blend of all *C. coccineum*.....CHRY-5X. '15¢
C. MAXIMUM or SHASTA DAISY: Larger flowers than *C. Leucanthemum*. In the newer varieties, the flowers are as large as 4" across, some double, even fringed petals. They make the best of cutflowers and where choice single flowers are wanted, such as used in the florist shops, the flowering stems should be restricted and not too many per plant allowed to grow. Rich soil and full sun best. Perennials flowering second year from seed. All white flowers.

—Alaska. Pure white, good stems.....CHRY-6A. 15¢
 —Chigwell Giant. Giant pure white flowers, beautiful shape.....CHRY-6C. 15¢
 —Conqueror. Large pure white, stems 2½ ft. long.....CHRY-6C. 15¢
 —Diener's Double White. Giant double flowers.....CHRY-6DW. 20¢
 —Exhibition. Large Swiss strain.....CHRY-6E. 20¢
 —Mrs. J. Tersteeg. Robust Holland strain.....CHRY-6T. 20¢
 —Fringed Beauty. Fringed and Curled petals.....CHRY-6F. 20¢
 —May Queen. Medium size, good for garden massing in border.....CHRY-6M. 15¢
 —Mont Blanc. Extremely large flowers.....CHRY-6MB. 15¢
 —Polar Sea. New German strain.....CHRY-6P. 15¢
 —The Speaker. Enormous white flowers.....CHRY-6T. 15¢
 —White Dame. Choice Holland variety.....CHRY-6W. 15¢
 —Shasta Blend. Contains all the above with hybrids.....CHRY-6X. 15¢
C. INODORUM: see *Matricaria inodora*.

Other Chrysanthemum species:

—*cinerariaefolium*. Dalmatian *C.* 2 ft; HP.....CHRY-14. 20¢
 —Mawii. White ray fls, rose on back; 1'; HA.....CHRY-29. 20¢
 —Nivellei. White ray fls; 1' across; 1'; HA.....CHRY-35. 20¢
 —Korean Hybrids. Saved from the best named varieties.....CHRY-22K. 20¢
 —Arctic Hybrids. Arctic Daisies. Single, very hardy; HP.....CHRY-22A. 20¢

CHRYSOPSIS. (kris-OP-sis) Golden Aster.

Daisy-like yellow heads of ray or disk flowers on 1-3 ft. plants and at home in a dry sunny part of the garden. They are hardy perennials.
 —falata. Silky gray fol; pretty yellow fls; RG; 18"; HP.....CHSO-2. 20¢

CINERARIA. (sin-ee-RAY-ree-ah) Botanically *Senecio Cruentus*.

Listed here are only those varieties grown by the florist for pot plants. Seed may be sown from April to Sept., May and June being the main months. They make a very easily grown pot plant.

—Cremers Prize Strain. 20" plants, large flowers, choice strain.....CIN-1. 50¢
 —multiflora nana. Dwarf compact plants; large flowers excellent.....CIN-2. 50¢
 —Berlin Market. 15" tall, brilliant strain, large flowers.....CIN-2B. 50¢
 —Siter's Rainbow Strain. Compact plants; brilliant colors; lge fls.....CIN-4. 50¢
 —Cineraria Blend. A carefully hand made blend for the GH.....CIN-X. 50¢

CIRSINUM. (SUR-si-um) Plumed Thistle. *Compositae*.

Rank growing prickly plant with purple, yellow and white flowers in heads; easily grown and for bold effect in the wild garden.
 —occidentale. Silvery fol; fls scarlet; pretty; 2 ft; HB.....CIRS-13. 20¢
 —cardioidissima. White-tomentosa fol; 2-4 ft; HB.....CIRS-13C. 20¢

CISTUS. (SIS-tus) Rock Rose. *Cistaceae*.

Not hardy in the far North and best in full sun, dry light soil with lime present. They are shrubby and flowers much like single roses. Start in pots; do not prune much.
 —ladaniferus. Gum Cistus. Pretty sh with white purple spots; 3 ft; HHS.....CIST-10. 25¢

CLARKIA. (KLARK-ee-ah) *Onagraceae*.

Annual plants, easily grown in a sunny place in light soil. They are very pretty for the border, growing 2-3 ft tall, in upright bush form. The flowers are ver pretty. Blooms in July and August, space plants 1 foot apart. Start indoors or the seed can be planted where the plants are to grow; they are hardy annuals.

C. ELEGANS: The commonly grown species, coming in many pretty varieties both single and double flowers; 2 ft. tall.
 —Brilliant. Double brilliant orange.....CLAR-1B. 15¢
 —Enchantress. Double salmon-pink, large, pretty.....CLAR-1E. 15¢
 —Firebrand. Brilliant copper-scarlet.....CLAR-1F. 15¢
 —Gloriosa. Distinct break in color, bright crimson.....CLAR-1G. 15¢
 —May Blossom. Pure glowing orange, double.....CLAR-1M. 15¢
 —Illumination. Orange mingled with rose; outstanding variety.....CLAR-1L. 15¢
 —Orange King. Bright orange-scarlet; best orange.....CLAR-1K. 15¢
 —Purple Prince. Very double rich purple flowers.....CLAR-1P. 15¢
 —Salmon Queen. Best double salmon-rose.....CLAR-1S. 15¢
 —White Prince. Best double pure white variety.....CLAR-1W. 15¢
 —Novelty Blend. Careful blend of colors.....CLAR-1X. 15¢
C. PULCELLA: Grows 18" tall comes in different colors and fine for the border; HA
 —alba. Pure white.....CLAR-4W. 15¢
 —Single Mixed.....CLAR-4SX. 15¢
 —Double Mixed.....CLAR-4DX. 15¢
 —Blend. Both single and double mixed.....CLAR-4X. 15¢

CLEMATIS. (KLEM-at-iss) Virgin's Bower. *Ranunculaceae*.

Woody perennial climbers thriving in a rich loamy soil on alkaline side. The seed should be stratified. The large flowered hybrids commonly grown, are increased by cuttings and these are best in partial shade. Mulch soil at base of plants.

—alpina. Fls blue-violet, ½" long, cl to 6 ft.....CLEM-5. 20¢
 —chrysocoma v. sericea. (Spooneri). Erect or cl to 20"; fls rose.....CLEM-24. 20¢
 —columbianum. Blue or purple; 10 ft; June.....CLEM-27. 25¢
 —crispa. Bluish purple, nodding, fragrant; June-Sept; 10'; Texas.....CLEM-29. 15¢
 —lathyriifolia. Vigorous cl; inch wide panicles of white fls.....CLEM-77. 25¢
 —ligusticifolia. Vigorous cl; inch wide panicles of white fls.....CLEM-80. 25¢
 —montana. Cl to 25"; fls white turning pink, yellow stamens; fragrant.....CLEM-86. 25¢
 —Pitcheri. Fls urn-shape, purplish, 1" long.....CLEM-92. 25¢
 —recta. An erect plant to 5 ft; fls white 1 in. across; fragrant.....CLEM-98. 25¢
 —Scottii. Erect plant; fls urn-shape purplish brown; May-June; Wyo.....CLEM-103. 25¢
 —serratifolia. Cl to 10 ft; fls yellow, purple stamens, Aug-Sept. Korea.....CLEM-104. 20¢
 —Clematis Blend. All species.....CLEM-X. 20¢

IRIS

By Walter Welch, Indiana.

It is regrettable that more gardeners do not grow Intermediate Iris. These fill in a space between the blooming of the Dwarf Iris and the Tall Bearded. One of the reasons is that the hybridizers have neglected to give us improved varieties.

Around 1920 Caparne of England developed a good number of varieties, which have mostly been lost to commerce, then the Sass Brothers worked with them and more recently Robert Schreiner. Most of these latter are still being grown and several of them are well worth having. Ruby Glow and Black Hawk are outstanding, while Nymph, Cosette, Susa, Red Orchid and Andalusian Blue are among the best varieties.

Field for the Hybridizer

Here is a field for the hybridizer that offers fresh possibilities and practically untouched. The main reason that small progress has been made with Intermediates is the difficulty with fertility. Intermediates are the results of crossing Tall Bearded Irir with Dwarf Iris. *Chamaeiris* varieties of Dwarfs have been used almost exclusively, and these hybrids are notoriously infertile, offering difficulties in carrying the breeding past the first generation. However persistence will result in a few seed and fertility increases in further generations.

Recently Paul Cook and Geddes Douglas have used *I. pumila* with the Talls with encouraging success. The progeny has shown remarkable fertility as well as an entirely new and different type of Intermediate. These hybrids have wide rounded falls that are almost horizontal; the substance is excellent, somewhat earlier than the *Chamaeiris* type and bloom on unbranched stems with terminal buds. Some of them are reminiscent of the Onco and Regelia class, with bright spots of color on the falls and patterns entirely different than either of the parents.

The Cook Garden

Last spring in Cooks garden there were blues as pure as the heavens above, nothing in the Talls could compare with it. There were falls with patterns and central areas as green as the leaves, on a background of white. Pure yellows and whites were abundant. What future generations will bring is a challenge to excite the imagination.

If you are looking for a real gardening thrill, try crossing some of your Tall Bearded varieties with *I. pumila*. This first generation cross will give you a wide range of the more dominant colors and forms. But that is only the beginning. By intercrossing these seedlings or selfing individual plants you will get those latent or recessive characters and forms, bringing out every possible combination inherent within the blood of the two parents. Here is where you become a creator, molding your product through continued generations of seedlings until the perfect ideal is realized. Until you have experienced this type of gardening, you have not begun to taste of the real pleasure it offers.

The seed bed for all acid-demanding plants such as *Vicciniums*, *Rhododendrons*, *Azalias*, the seed medium should be either all peat or half sand and half peat. Any other medium will only result in failure.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

THE NEW PINK NARCISSUS

This introduces the NEW "PINK" DAFFODILS that will be offered during the next year or two. They are lovelier, more delicately tinted and have much larger Trumpets than Mrs. R.O. Backhouse, which is their parent. Each one of them is a jewel in any Daffodil collection. All are excellent growers, free flowering and multiply rapidly.

Bulbs offered are all TOP SIZE, DOUBLE NOSE.			Each	5	100
ANTIBES.	Strong white perianth. The trumpet is pale apricot, shaded salmon and orange when opening, later shading to a soft pink.		.30	\$1.25	\$20.00
BIARRITZ.	Pure white perianth. When opening the trumpet is a pale Buttercup-yellow with a broadly fringed and apricot shaded edge, when fully developed the trumpet becomes a clear apricot-pink. Strong grower.		.30	1.25	20.00
CANNES.	Good, stiff, white perianth, somewhat inclined to turn backward. Trumpet or cup medium sized, slightly flaring, soft canary yellow with most interesting pink ruffles on edge of cup.		.30	1.25	20.00
CHAMPAGNE.	Pure white perianth of good substance. The trumpet is large and pale cream-pink with broad overlapping ruffled edge. When in full bloom the color turns to salmon-pink. Strong grower.		.60	2.75	40.00
LADY BIRD.	White perianth of perfect form. The large trumpet is distinctly pink and flaring, evenly ruffled, pale apricot outside, deep orange-apricot inside at opening deepening towards the throat. Strong stem. Most outstanding variety; resembling Daisy Schaffer in form and size.		.60	2.75	40.00
MENTONE.	White perianth, trumpet apricot, shaded pink outside, which is fringed and of a lovely tangerine orange and rose color; inside somewhat stronger in color than outside. When fully developed the flower turns to a nearly clear pink. Cup length is about 2½ inches and it is 2 inches wide. Outstanding.		.70	3.75	50.00
PINK BEAUTY.	White perianth and of good form,, opening apricot-yellow with somewhat darker edge, later becoming salmon-pink.		.30	1.25	20.00
PINK FANCY.	White perianth, well formed, with a pale apricot trumpet, broadly fringed soft pink. Free flowering and excellent for naturalizing.		.20	.60	15.00
PINK FAVORITE.	Pure white perianth; the trumpet is at opening pale yellow, soon turning to a beautiful apricot-pink somewhat darker inside.		.30	1.25	25.00
PINK GEM.	White perianth; the trumpet is a lovely clear salmon-pink turning to clear pink when tint light apricot-pink rim. This variety draws attention wherever shown. It is		.40	1.75	30.00
PINK GLORY.	The "Orchid" among the Pink Narcissus. Pure white perianth, somewhat loose but graceful, with an exquisite long trumpet opening light Indian-yellow soon shading to a lovely pink, inside deep pinkish-apricot remaining so till the end. Without question the most beautiful "PINK" ever raised. When used as a corsage with some Asparagus green it is as delicate as an Orchid.		.50	2.25	43.00
PINK RIM.	Stiff, pure white perianth of good form, the cup is a citron-yellow with a very distinct light apricot-pink rim. This variety draws attention wherever shown. It is quite distinct from all others. Strong tall stem.		.40	1.75	30.00
PINK SELECT.	Pure white perianth opening pale yellow, soon turning to a lovely pink with apricot shading but mostly pink when fully developed. The trumpet is nearly 2 inches long and 2 inches wide. Excellent stem		.40	1.75	30.00
ROSY SUNRISE.	Pure white perianth, well formed and of good substance; the trumpet is wide and flaring apricot, changing gradually to a soft pink. A giant among the "Pinks" and it will be one of the leaders among this class as soon as it becomes better known.		1.25	6.00	115.00
SIAM.	"The Queen of the New Pink Novelties". Pure white perianth of good substance, with a lovely and large, strongly fringed trumpet of pure salmon-apricot with distinct rose-pink shading. The inside of the trumpet turns to a soft Indian-yellow when fully developed. The color of this variety is rather difficult to describe.		.25	1.00	22.00
ONE LARGE BULB of EACH of the ABOVE 15 BEAUTIFUL VARIETIES of the NEW PINK DAFFODILS, all labeled (total value \$7.00) SPECIAL PRICE \$5.00.					
This will make an ideal gift for a garden friend. We recommend this collection very highly, as it contains the very latest and best in the NEW PINK DAFFODILS.					

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

FLOPPING PLANTS

In a recent bulletin of the American Penstemon Society, Mrs. Considine of Montana, mentioned about Penstemon glaber flopping in eastern gardens. She says, "Close by there is a high hillside that is a natural glaber garden (it is native there) and no monotony either, and not a flop. But seeds wash from there to the creek bed below and the resulting plants may or not flop. Plants volunteer all over the place and flop or stand according to the environment."

Mrs. Considine has the correct answer but it could be plainer if she had said, the plants on the steep hillside, where they are always found in nature, are growing in a soil with a low organic content but when the seed germinates in the rich soil of the creek bed, they flop.

Therefore if you are having this trouble, check up on your plant to see if it is one that does best in soils not too fertile.

Whether plants flop or stand upright or whether they bloom or not, is in nearly every case due to the amount of plant food present in the soil.

I hear of so many gardeners raising this question and ever so often one will write, "after 3 years (or may be its 5) patiently waiting my plant finally bloomed". The reason for this is the excessive amount of plant food in the soil for the plant in question. In 3 or 5 years time much of the excessive food has been depleted and finally the correct balance was arrived at and thus the flowering of the plant or to be more exact the plant finally tried to form seeds.

Cleome is easily grown from seed and it should be in every border. Plant in May when they germinate readily. Thin the plants to two feet apart.

They make excellent border subjects and most desirable cutflowers; they flower from June till frost.

PALM SEEDS

NOTE: Due to the fact that these seeds mature at different times of the year; we can accept orders only for filling as the fresh seed is received. If the seed is not on hand when you order we will advise promptly when it may be expected.

PACKETS: 75¢ each	per 1000 Seeds
(250 seed at the 1,000 rate)	
BRAHEA roezli (glauca).....	\$ 9.00
CHAMAEROPS excelsa	per lb. .90
humilis.....	" 1.00
COCOS australis (C. campestris).....	4.00
flexuosa.....	4.25
Romanzoffiana.....	6.00
CORYPHA australis	7.00
CORDYLINE v. Dracoena	
ERYTHEA armata v. Brahea	
JUBAEA spectabilis	8.00
KENTIA Belmoreana	
Forsteriana.....	20.00
LATAINIA borbonica (Livi. sinensis).....	6.00
PHOENIX canariensis	3.25
dactylifera.....	9.00
leonensis (P. reclinata).....	3.75
Roebelinii.....	10.00
sylvestris.....	3.50
PRITCHARDIA filifera	2.75
SABAL Adansoni	4.00
Palmetto (S. umbraculifera).....	4.00
TRACHYCARPUS v Chamaerops	
WASHINGTONIA robusta	4.00

PIONEER SEED COMPANY
Dimondale - Michigan

THE SEED BEDS AT FARM



FLOWER SEED BEDS AT OUR SEED FARM

Our seed farm, offices, and growing are on 80 acres; while we are listed at Dimondale, we really are 7 miles south of Lansing on state highway 99 and 1½ mile east of Dimondale. To reach our place one can go north thru Eaton Rapids, 8 miles; we are also 5 miles west of Holt; coming from the west on U. S. 27 from Charlotte you turn right at a small community called West Windsor, a couple of stores on each side of the highway, then go on east to Dimondale, where you can get directions.

The flower seed beds are all raised beds with trenches between. We seem to have better success with most flowers growing them for seed. However much hand work is necessary and this is becoming more a problem each year.

COBAEA - COLEUS - COLLINSIA

CLEMATOPSIS. (klem-ah-TOP-sis)

Seeds offered come from South Rhodesia and are drought resistant growing in full sun. These may not be hardy in the North.

—Stanleyii. Shock Headed Peter. Drooping white anemone-like fls; 4-5 ft. CLTP-1. 30¢

CLEOME. (klee-OH-me) Spike Flower.

Easily grown from seed in May, germinates quickly. Thin plants to 2 ft; grows 4-5 ft. tall and makes showy plants in the border, flowering from June till frost. Try them as a hedge; half hardy annuals.

C. SPINOSA: (C. gigantea or C. pungens) Spider Flower.

—Great Pink. Rich rose not turning to white. CLEO-5G. 15¢

—Pink Queen. Clear soft pink turning to apple-blossom; 5 ft. CLEO-SP. 15¢

—Mrs. Colen Campbell. Pure white NEW this year; good. CLEO-SC. 25¢

—lutea. Golden yellow fls; 3 ft; Colo. CLEO-3. 15¢

CNEOREDIUM dumosum.

—dumosum. 2-4 ft sh; S. Cal; fls white followed by brown fruits. CNEO-1. 15¢

COBAEA. (koh-BEE-ah) Polemoniaceae.

Tropical climbing shrub but in the North treated as an annual. It is used in baskets or for outdoor climbers. Tender.

—scandens. Cl to 25 ft; violet-blue fls; TCL. COBA-2. 15¢

CODONOPSIS. (koh-doh-NOP-sis) Campanulaceae.

Perennials with shades of blue and yellow flowers with darker veins and blotches, a few climbers, and having a milky juice and heavy scent. Culture same as Campanulas but are not hardy in the North, requiring winter protection.

—clematidea. Bell-shaped fls with white and yellow center; 1'; HP. COD-1. 20¢

—viridiflora. Cl, yellowish green fls purplish dots at base. COD-10. 20¢

COIX. (KOH-ix) Gramineae.

Tall grasses with broad leaves and bead-like seeds. These are used as low borders, for everlasting or dried grass and the seeds can be strung as beads.

—Lacryma-Jobi. Job's-Tears. TP but grow as annual; 12'. COIX-1. 15¢

COLEUS. (KOH-lee-us) Labiatae.

These are showy annuals and perennials. Plants grown from seed are stronger and of bright colors. Sow seeds early in pans and keep warm. For bright coloring grow in full sun; they are used entirely as foliage plants both in boxes or as house plants.

—Brocade Strain. Large leaved, rich velvety colors. COLE-1. 25¢

—Fringed Leaf, Mixed. COLE-2. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

HERB HEDGES

This is about low, compact hedges, that can be grown from garden herbs. They must be low, 1 foot or so high, stand shearing and having a close growth at the base of the plant.

The list is not a long one and for the greater part of the country the following will make up the list. Rosemary, Hyssop, Lavender, Lavender Cotton and Germander.

Germander (Teucrium Chamadrys) is probably the best and while it may not be hardy in the northern most states, it is hardy in sections of Michigan.

It is evergreen in character, woody in growth with tiny, very thick and glossy dark green leaves. It grows very slowly and produces new growth all summer, both being good hedge habits. It can be grown from seed or by divisions or cuttings.

Lavender Cotton (Santolina Chamaecyparissus), grows slowly, is bushy in form, making a compact little hedge. It is hardy in our northern states. Unlike Germander, its flowers are showy, in racemes and appearing to be a mass of golden-yellow in June.

It does best in full sun and a rather dry soil. It is grown from seed.

Hyssop (Hyssopus officinalis), is a low bushy plant to 2 feet., woody at the base and with long slender dark green leaves having a mild mint odor.

Its flowers have a good shade of blue and for this, alone, makes a good plant in the border. If kept cut back, it flowers most of the summer.

It is easily grown from seed, flowering the second summer. It is not hardy in the far North.

Lavender (Lavandula spica), is rather dwarf compact shrub of whitened appearance. It will stand the northern winters with little damage.

Best in dry gravelly or stony soil and in sun. For a good yield and quality of its oil a dry soil is absolutely essential.

It is very fragrant and the leaves are placed in linen drawers for their delicious odor.

True Lavender or L. vera, is a taller plant and hardier. Propagated by seed.

Rosemary (Rosmarinus officinalis), is a small shrub and often mistaken for lavender; grows to 2 feet, stems woody, the leaves are grayish green and highly aromatic.

It is a drought resistant plant and the dryer the soil the better is its pleasant odor.

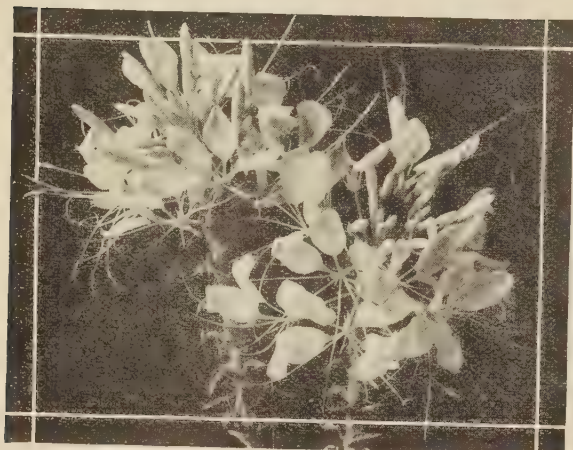
While it can be used to good advantage as a low hedge, it has many other good points. It is highly prized as an herb in cooking of meats; for its odor when placed with stored linens and said to keep away the cloth moth. It is also used as a condiment to season sausages and other chopped meats, as well as in mixed pickling spices. It is not hardy in the northern states. Propagated by seed.

SEEDLESS WATERMELONS

Certain Japanese growers have been doing some notable work in various forms of hybridization. One of these has been the production of seedless watermelons.

We have grown two of these in our trials the past season. We found some producing hard seeds while others produced only the husk of the seed, which proved soft and edible. On the whole, the quality of each was perhaps satisfactory, but certainly not outstanding. We believe they have a future but not at the present high price over the present types.

A New Cleome - Helen Campbell TROPICAL SEEDS



Large Packet 25¢; 1/4 Ounce \$1.00.

At last, a tall, vigorous, light-stemmed companion to Pink Queen, in pure white!

Various colors of Cleome have been offered in the past but have not become standard items because of some deficiency in habit or trueness.

Helen Campbell, selected from Pink Queen by Mrs. Colin Campbell in Canada and named after her, has all the vigor, height and free flowering characteristics which made Pink Queen an all American.

In addition, the pure white color and light green stems are distinct "breaks" which reproduce almost perfectly true.

Beautiful landscape effect can be obtained by interplanting the two colors.

COSMOS - COTONEASTER - CORN

COLEUS continued from page 25.

- German Hybrids. Best German strain.....COLE-3. 25¢
- Glory of Vichy. Especially strong in apricot and copper colors.....COLE-4. 25¢
- Large Leaved Strain. A French strain in bright colors.....COLE-5. 25¢
- Pride of Montferland. A new strain for market plants, bright colors.....COLE-6. 25¢
- Pyrenean Giants. Large robust plants, excellent for bedding.....COLE-7. 25¢
- Super Colossal. Copper shades, a fine strain.....COLE-8. 25¢
- Striped Empel. Leaves striped green, yellow and brown.....COLE-9. 25¢
- Rainbow Blend. Blend of all kinds.....COLE-X. 25¢

COLLINSIA. (ko-LIN-zee-ah).

- Hardy annuals, attractive, free flowering; much used for edging and rock gardens. They prefer a dry location; seed can be sown in the fall or early in the spring.
- heterophylla (bicolor) Rose, white, lilac, blue; June-Oct; 15".....COLL-3. 15¢
- candidissima. All white flowers.....COLL-3C. 15¢
- verna. Blue-Eyed-Mary, 10" tall; fresh seed in June; HP.....COLL-7. 25¢

CONVOLVULUS. (kon-VOLV-yew-lus) Morning Glory Family.

- Flowers similar to the Morning Glory and used for vines as they are. Some may become troublesome weeds and the field "Morning Glory" is C. arvensis.
- tricolor. Deep blue, yellow and white fls; HA.....CONV-22. 15¢
- Cambridge Blue. Clear azure-blue; 1 ft tall.....CONV-22C. 15¢
- Royal Ensign. Deepest blue; ideal bedder and edger; 1 ft; HA.....CONV-22R. 15¢
- Randi. Dainty RG species; 1 ft; pure white; sun; fol. silvery.....CONV-17. 20¢
- Convolvulus Blend. All kinds mixed.....CONV-X. 20¢

COSMOS. (KOS-mos) Compositae.

Showy late flowering annuals and perennials, closely allied to the Dahlia. They are easily grown and thrive even in poor soils. Useful both in the border and for cutflowers.

- C. BIPINNATUS: Half hardy annuals to which belong the commonly known garden forms. Sow direct or may be started indoors. Height 8-10 feet.
- Radiance. Deep rose with crimson ring; a high class new variety.....COS-1R. 20¢
- Dazzler. Pretty crimson; 4 ft tall.....COS-1D. 15¢
- Pinky. New clear rose-pink.....COS-1P. 15¢
- Blend. All the Sensation types, above, mixed.....COS-1X. 15¢
- TRUE or EARLY FLOWERING TYPE: A superior garden strain of large size but early.
- Crimson Queen.....COS-2C. 15¢
- Rose Queen.....COS-2R. 15¢
- White Queen.....COS-2W. 15¢
- Mixed Queen. Above colors carefully blended.....COS-2X. 15¢

- HYBRID VARIETIES: These are not as tall growing; excellent in border and cutting.
- Orange Flare. Large orange flowers.....COS-3F. 15¢
- Orange Ruffles. Ruffled petals; pretty.....COS-3R. 15¢
- Yellow Flare. Rich yellow.....COS-3Y. 15¢
- Mixed Hybrids.....COS-3X. 15¢

OTHER COSMOS TYPES:

- Double Crested. Large double crested flowers in white, pink and crimson.....COS-4X. 20¢
- Late Mammoth Mixed. Large single type best for the South.....COS-5X. 15¢
- Lady Lenox Pink. Crested flowers.....COS-6K. 15¢
- White.....COS-6W. 15¢
- Mixed.....COS-6X. 15¢
- Double Mixed.....COS-7X. 15¢
- Peerless, Double Mixed.....COS-8X. 15¢
- Cosmos Blend. All kinds mixed.....COS-X. 10¢

CORTADERIA. (kor-ta-DEE-re-ah) Pampas Grass. Gramineae.

Ornamental grasses and not hardy in the North. These thrive in rich light soils. For the North start indoors in Jan. or Feb. and grow on in pots. They are very effective.

- Selloana. (C. argentea) To 20 ft; panicles 3'; white and pink, silky; TP.....CORT-3. 15¢

CORYDALIS. (kor-RID-al-is) Fumariaceae.

Easily grown annuals and perennials with interesting flowers similar to those of the Bleeding Heart, in yellow, blue, rose and purple.

- lutea. For shady places; ferny lvs; golden fls; 1 ft; HP.....CORY-12. 20¢
- species from Africa. A new unnamed species.....CORY-30. 30¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

SEEDS OF TROPICAL and SUB-TROPICAL PLANTS.

NOTE: Seeds of the following come in at different times of the year and orders will be filled promptly when they arrive. Fresh seed is always best. It will be best to place your orders as far in advance as is possible.

Packets at 75¢ each. per Lb.

- ACACIA cyanophylla\$ 8.00
- dealbata6.50
- Farnesiana2.60
- Horrida5.00
- julibrissin v. Albizzia3.25
- melanoxylon3.25
- mollissima2.75
- pyrenantha2.25
- retinoides (A...floribunda).....11.00
- ASPARAGUS plumosus nanus1.00
- 1,000 seeds for \$1.60.
- retinoides (S. floribunda)5.00
- sprangeri (1,000 sd. \$1.60).....12.00
- CASUARINA strita (quadrivalvis)9.00
- torulosa (tenuissima)9.00
- CERATONIA siliqua50
- CITRUS aurantium1.50
- DASYLIRION longifolium1,000 seeds 3.03
- DRACOENA Dracoindivisa (Cordylina)9.50
- ERYTHRINA Crista-galli1,000 seeds 5.00
- EUCALYPTUS botryoides12.00
- globulus10.00
- Gomphacephala12.00
- resinifera12.00
- rostrata5.50
- viminalis12.50
- hybrid Rostrata x Botryoides7.00
- GREVILLEA robusta, only in packets ..
- HOVENIA dulcis only in packets.....
- ILEX paraguayensis only in packets
- JARARANDA mimosaeifolia only in pkts
- MIMOSA bracinga only in packets
- paduca only in packet.....
- MOQUINIA polymorpha only in pkts
- MUSA ensete
- NERIUM Oleander5.00
- OPUNTIA ficus-indica5.00
- PARKINSONIA aculeata6.00
- PASSIFLORA coerulea only by pkt....
- PISTACIA vera3.00
- POINCIANA Gillesii3.80
- PSYDIUM guayava only in packets...
- PUERARIA Thunbergii (Kudzu Vine) pkts.
- SCHINUS molle1.00

If you are interested in tree or shrub seeds by the pound, please write us for quotations.

PIONEER SEED COMPANY
Dimondale - Michigan.

MARJORAM PLANTED GERMAN WAY.

Those growing Marjoram, especially for the market, should try the German method of setting about 6 plants within a radius of 8-9 inches.

It is a very desirable method because a group of plants will support each other, thus preventing the plants from falling into the dirt causing soiled leaves as is the case in single plant stands.

If you shear your plants, it is easier done in the group planting.

PLANT BEANS ON EDGE

Try planting beans, especially the large seeded sorts, on edge with the eye down; seed so planted will start growth in 4-6 days. Watermelon and Squash seed are also best planted on edge with the eye down.

GREENHOUSE

Suggestions



We shall carry a column each month under this heading in which we will list items of interest to those having greenhouse space

Cultural information is probably most interesting but we will be pleased to print any short articles from our readers on subjects of interest from the building and operation of the greenhouse to the raising and marketing of the plants and flowers grown. Make it your column, it's YOURS.

DURING THE MONTH OF MAY.

During May, when everything is in a rush, do not neglect the preparation of the field soil for your Carnations, Christmas Cherries, Vinca stock, etc. These plants for next winter use in the greenhouse, must be given a good start in their outdoor plots and the soil should be properly worked before transplanting time comes around.

Start some Calliopsis and Clarkia.

Early May is an excellent time to sow some Calliopsis and Clarkia seed for flowering in flats; they grow quickly and make profitable cutflowers.

If you have flatted plants in the cold frame, a little liquid feed in the form of ammonium sulphate is recommended.

Shift any Heliotrope and Lantana plants to 4" pots at this time and the same is true on any Petunias that are to be sold in 4" pots, do not delay this shifting after May starts.

PLANT GLADIOLUS BULBS NOW.

Start planting Gladiolus bulbs now and all the bulbets you will grow this season. If the bulbets were mixed with Vermiculite, and placed in a burlap sack, which is then soaked in water till wet and then placed in cool place for a week or so before time to plant outdoors, you will find you can easily gain 2-4 weeks in start, resulting in larger bulbs this fall. Watch that they do not heat while in the sacks.

HARDY PLANT SALES.

Hardy plants are always good sellers and Pansies, Bellis Daisies, Forget-me-nots, hardy Primulas, dwarf Phlox and bedding Violas are much in demand. They can be grown both in flats or pots.

Early flowering hardy plants such as Alyssum saxatile, Arabis, Anemone pulsatilla, can be had in flower, if plants were started last summer. They are always good sellers.

DELPHINIUMS.

If you started Delphiniums last summer and they now are in pots or flats, they should be set out at once. They like a light soil with perfect drainage, especially during the winter months.

We have a good supply of seed on hand in the Pacific Giant Strain and seed can be sown now for early plants which can be either sold in 4" pots during the summer or they can be transplanted in late summer for your own cutflowers next year.

Delphiniums are one of the best commercial cutflowers.

Give Sempervivums rich soil to get handsome foliage.

COREOPSIS-CORYDALIS-COSMOS

COREOPSIS. (koh-ree-OP-sis) Compositae.

Annual and perennial plants with yellow, brown or rose flowers, blooming in the summer and fall, making ideal cutflowers as well as display in the border. The annual kinds are listed under Calliopsis, which see.

- C...LANCEOLATA.** Perennials to 3 ft, hardy and grown for cutflowers and border.
 —New Gold. 100% double, rich golden yellow; 18", ideal for cutting.....**CORE-12N.** 15¢
 —Double Sunburst. 1½-2 in. ac; golden yellow; comes 80% double.....**CORE-12S.** 15¢
 —Mayfield Giant. Large golden yellow fls; larger ray petals.....**CORE-12M.** 15¢
 —superba. Large single golden yellow fls; 2-3" ac; 3-4' tall.....**CORE-12B.** 15¢
 —Coreopsis Blend. Above kinds mixed.....**CORE-12X.** 15¢
 —insecta. S. Rhodesia. 4-5 in; golden yellow; 3 ft.....**CORE-10.** 15¢
 —verticillata. Thread-leaf C. Deep yellow, heads 2" ac; 3 ft; HP.....**CORE-30.** 20¢

CORN -- ORNAMENTAL KINDS.

These ornamental corns are especially nice for children to grow; they are easy and the colors are interesting, besides they can be sold in the fall at a good profit.

- Listed here are those sorts with colored kernels and used for ornamental purposes.
 —Basset's Indian Corn...The brightest colored kernels in all colors.....**CORN-1.** 20¢
 —Strawberry Pop Corn. True red strawberry-shape; dark color.....**CORN-2.** 20¢

COTONEASTER. (koh-toh-ne-AS-ter) Rosaceae.

Temperate zone shrubs, mostly from China, very ornamental, but many are not hardy in the far North. They like a sunny position and well drained soil.

- acuminata. Pinkish fls in clusters; 12 ft; this is hardy.....**COTN-1.** 25¢
 —frigida. Fls white in dense clusters; fr bright red; South only; 20'.....**COTN-24.** 25¢
 —microphylla. Evergreen, 3 ft, solitary white fls; fr bright red.....**COTN-42.** 25¢
 —rotundifolia. Evergreen, fls white in clusters; fr red; 12 ft.....**COTN-55.** 25¢
 —Cotoneaster Blend. All kinds offered, mixed.....**COTN-X.** 25¢

CRATAEGUS. (kra-TEEG-us) HAWTHORN, THORNAPPLE. Rosaceae.

Fine specimen shrubs and trees, nearly all of which are hardy in the North. They come very true from seed which germinates slowly and should be stratified.

- Crus-galli. Cockspur T. Fls white tinged with red; fr red; 20'; hardy.....**CRAT-16.** 25¢
 —inricata. (C. coccinea) Dark glossy lvs; fr large scarlet; 15 ft.....**CRAT-35.** 25¢

CRAWFURDIA. (craw-FUR-de-ah) Gentianaceae.

Twining plants from the Himalayas and allied to the Gentians, which see for their culture. They are not hardy in the North but grow well in California. They are rare in American gardens.

- japonica. Fls dull greenish; fleshy red fr; very ornamental; vine; HHP.....**CRAW-1.** 35¢
 —speciosa. Fls blue, funnel-shape; the hardiest; vine; HHP.....**CRAW-3.** 35¢

CREMANTHODIUM. (cre-man-THOD-ee-um).

- Thompsonii. Fls lemon-yellow, 1¾" ac.....**CREM-5.** 25¢

CREPIS. (KRT-pis) HAWK'S-BTARD. Compositae.

Flowers are in yellow, red or orange heads, and grown in the border. Light loam soil and full sun.

- glomerata. Fls yellow; black anthers; 6-10" high.....**CREP-5.** 25¢
 —incarna. Pink fls; 10' for RG; HP.....**CREP-7.** 40¢

CROCUS. (KROH-kus) SAFFRON. Iridaceae.

While many species of Crocus are ordinarily purchased as bulbs, a great deal of pleasure can be had in raising them from seeds, especially in the new hybrids one can grow.

- Fleischeri. Fls white striped lilac; a rare species for RG.....**CROC-14.** 30¢
 —speciosus. Fls lilac striped bluish, autumn flowering.....**CROC-33.** 25¢
 —Tomasinianus. Fls pale reddish blue, spring flowering; naturalizes.....**CROC-39.** 25¢
 —Crocus Blend. Mixture of species.....**CROC-X.** 20¢

CROTALARIA. (kroh-tah-LAY-re-ah) RATTLE-BOX. Leguminosae.

Plants with Sweet Pea-like flowers and swollen pods. Soak seeds in warm water before planting. In the North they are greenhouse plants.

- refusa. Golden Sweet Pea. Pretty, golden yellow fls; TA.....**CROT-12.** 20¢

CRUCIANELLA. (kroo-shan-EL-ah) CROSSWORT. Rubiaceae.

Annuals or perennial plants many of which are grown in the rock garden, thriving in partial shade.

- stylota. Small pink fls; RG; grow as an annual; trailer for dry bank.....**CRUC-6.** 20¢

CUCUMIS. (KEW-kew-mis) Cucurbitaceae.

Tender annual vines of which the cucumber and melon belong. C. Melo is the muskmelon. They are mainly grown for their edible fruits as well as for ornament.

- Melo v. Dudain. Pl small; fr size of orange, marbled; highly perfumed.....**CUCU-4D.** 20¢

CUPHEA. (KEU-fe-ah) Lathraceae.

Tropical plants mostly greenhouse grown in the North but pretty annuals for outdoors in the South. They are nice plants for boxes and baskets.

- Hybrids, Butterfly. Many colors; very pretty; 2'; TA.....**CUP-3B.** 15¢
 —Firefly. Beautiful bright scarlet; 2'; TA.....**CUP-3F.** 15¢
 —ignea. (platycentra) Cigar-Flower. Bedding; fls red, white; 1'; TA.....**CUP-5.** 20¢
 —Llavea v. miniata Vermilion. Brilliant vermilion fls; 1 ft; TA.....**CUP-8V.** 20¢
 —Cuphea Blend. All kinds mixed.....**CUP-X.** 15¢

CURCULIGO. (kur-KEW-lig-oh) Amaryllidaceae.

Stemless plants, Amaryllis-like, with short thick root stock. They are popular greenhouse foliage plants or outdoors in the South. Require high temperature, plenty of moisture and a rich soil.

- capitulata. Dark green lvs 3 ft. long; palm-like; fine for pots.....**CURC-1.** 30¢

CYANANTHUS. (cy-NAN-thus) Campanulaceae.

Small Himalayan plants, grown in the rock garden. They are related to Codonopsis but not climbing, flowering in late summer. Hold over first winter in pots; needs good growth first year.

- lobatus. One of the best; fls large blue, 6"; HP.....**CYAN-4.** 30¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

NEW TITHONIA-TORCH



"Torch" is good; it is the winner in the All American selections for 1951, the most important, novelty of the year.

It is easy to grow, as easy as Zinnias. Thrives on hot weather. It's orange-red, and red is the American public's favorite color. It is also a cutflower that blooms from August until frost. But best of all, it is only waist high, compact enough for any garden.

Torch is not the old-fashioned tall, late Tithonia that you may have seen. It is the result of scientific plant breeding; bred to be early enough for the North; dwarf enough for the South.

Tithonias are natives of Mexico, are therefore tender annuals and should not be set out doors till all danger of frost is passed.

Approximately 2,800 seeds per ounce,
Pkt. 25¢; 1/4 Oz. \$2.00.

CYCLAMEN - CYPRUS - DAHLIA

CYCLAMEN. (SIK-lam-en) Primulaceae.

Low greenhouse plants, some species hardy outdoors. The florist Cyclamen, *C. indicum*, is a very popular greenhouse pot plant.

CYCLAMEN INDICUM: Sow in Sept., requires 15-18 months for good 6-8" pot plants.

- Baardse's Wonder. Salmon with white border.....CYCL-9B. 50¢
- Bonfire. Brilliant salmon.....CYCL-9F. 50¢
- Glory of Wandsbeck. Dark crimson.....CYCL-9G. 50¢
- Rose of Marienthal. Soft rose with carmine eye.....CYCL-9M. 50¢
- Salmon-scarlet. Improved America.....CYCL-9S. 50¢
- White with Crimson Eye. Popular color.....CYCL-9E. 50¢
- White Wonder. Largest and best white.....CYCL-9W. 50¢
- New Ruffled, Mixed. Some should be in every planting.....CYCL-9RX. 50¢
- Rococo, Mixed. Extra large flowered strain.....CYCL-9CX. 50¢
- Cyclamen Blend. Hand made blend for greenhouse growing.....CYCL-X. 50¢

\$9.00 per 1,000 seeds.

CYCLAMEN SPECIES:

- europaeum. Bright red fls; fragrant; 4-5"; HP.....CYCL-6. 50¢
- neapolitum album. White hardy Cyclamen; autumn flowering; 4"; HP.....CYCL-12. 50¢

CYNOGLOSSUM. (sin-oh-GLOS-um) Hound's Tongue. Boraginaceae.

Annual, biennial and perennial plants, grown for cut flowers.

- amabile. (Chinese Forget-me-nots) Pink fls, 2 ft; HA.....CYNO-1. 15¢
- Firament. A compact blue variety; 15"; HA.....CYNO-1F. 15¢
- Wallichii. Blue fls; fine for bee food; 2"; HA.....CYNO-8. 15¢
- zeylanicum. Blue fls; India; 3 ft; TA.....CYNO-9. 15¢
- Cynoglossum Blend. All kinds.....CYNO-X. 15¢

CYMBALARIA. (sim-bah-LAY-ree-ah) Scrophulariaceae.

Creeping herbaceous perennials very much like Linaria. They are tender and should be grown as annuals in the North. Nice basket plants for shady places.

- muralis. Kenilworth Ivy..Lilac-blue fls; basket pl for shade.....CYMB-3. 15¢

CYPRUS. (sy-PEE-rus) Galingale. Cyperaceae.

Annuals but mostly perennials; leaves grass-like; flowers in spikelets. They are grown in ponds as pot plants.

- alternifolius. Umbrella Plant. Splendid plant for water edge; 3-4"; TP.....CYPE-2. 20¢

DAHLBORG DAISY: see Thymophylla.

DAHLIA. (DAL-yah) Compositae.

Tender perennials. The growing of them from seed is an interesting undertaking and many new forms and varieties can be developed. Start seed indoors for early flowers.

- Coltless Hybrids. Dwarf single, blooming in 4 months from seed.....DAHL-2. 20¢
- Scarlet Gem. Profuse blooming; scarlet fls.....DAHL-2S. 20¢
- Yellow Gem. Rich yellow variety.....DAHL-2Y. 20¢
- Collarette Hybrids. Large semi-double flowers.....DAHL-3. 20¢
- Decorative Giants. Exhibition strain from newest varieties.....DAHL-4. 25¢
- Mignon. Very large single fls in bright colors; 18".....DAHL-6. 25¢
- Queen of Moorland. Dwarf, blacklvs; double; Feb seed bl in July 18".....DAHL-9. 25¢
- Unwin's Dwarf Hybrids. Semi-double and double fls; 24"; bright colors.....DAHL-7. 25¢
- Single Varieties Mixed.....DAHL-8X. 20¢
- Dahlia Blend. All kinds mixed.....DAHL-X. 20¢

This seed list continues from page to page and from issue to issue and runs alphabetically.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Mulching Pays

Mulch material may either be decayed organic matter or the rough material one has at hand. Mulching around small flowering plants, of course, must be partly decomposed or at least such a texture as not to be bulky and unsightly.

Weeds, grass and coarse materials like corn stalks, etc., one has in the ordinary garden can be piled up neatly under a fruit tree, where it will rot down in the course of a year or this material, if not too much, can be used as a mulch under the tree, as much as 6 inches or more can be spread around.

There is considerable evidence that the available potassium content of the soil, under a mulch, is greater than when not mulched.

Soil bacteria is especially increased which in turn gives the tree a healthy appearance with a better and more regular bearing of fruit. Even trees grown in sod have a similar reaction.

I wish to suggest this method of growing tomatoes the next time you plant, especially if you have available wheat straw.

Plow and prepare the soil as usual and as soon as worked down, cover it with at least 6 inches of wheat straw. Then when the time arrives for setting out your tomato plants, just pull the straw away while you set them and then pull the straw back around them.

You will find you can raise the best crop you ever had and with no further work except picking. I would like reports from any of our readers on their experience with this method.

This same method can be used on sweet peas, corn, cabbage, etc.

HEMEROCALLIS OFFER

We offer the following well known and recommended Hemerocallis (Lemon or Day Lily) for Spring delivery, **prices quoted are post paid. Dozen lots of one kind at the price of 10.**

- Boutonnier. Orange; rosy peach blend 50¢
- Dawn. Rosy buff or copper-pink tone...50¢
- D. D. Wyman. Golden yellow; tawny splash on petal40¢
- Dr. Regel. Pure orange-yellow with scarlet eye50¢

- George Yeld. Large canary-yellow, brushed red50¢
- Gold Dust. Golden yellow, brown outside early30¢

- Golden Dream. Deep golden orange...50¢
- Gypsy. Lilac orange45¢
- Hankow. Yellow-orange, scarlet eye...60¢
- Imperator. Large orange red.....45¢
- J. S. Gaynor. Soft apricot; heavy text...60¢
- Linda. Golden yellow, base with red eye, Ruffled60¢

- Mrs. A. H. Austin. Deep golden orange60¢
- Mrs. J. R. Mann. Deep yellow with fluted petals45¢

- Ophir. Large golden yellow; free fl'ing.50¢
- Rajah. Brilliant orange, overlaid with reddish brown75¢

- Royal. Golden yellow; fragrant.....45¢
- Sir Michael Foster. Large apricot yellow ruffled50¢

- Sunny West. Large soft canary-yellow...70¢

Special Collection: One each of the above 19 varieties (value \$10.25) for \$7.00, postpaid.

Send orders to:

PIONEER SEED COMPANY
Dimondale, Michigan, U.S.A.

THE CHOICEST DELPHINIUMS



DELPHINIUM. (del-FIN-ee-um) LARKSPUR. Ranunculaceae.

A large number are showy garden flowers but the common garden forms make up the greater part of the plantings. Seed can be planted anytime for flowering plants the following year. Fresh seed can be had in August. Seed purchased should always be planted promptly upon receipt, otherwise it should be kept in your refrigerator. Seed pans should be placed in a warm and dark part of the room, with a nite temperature of around 60 degrees.

PACIFIC GIANT SERIES: These are the most popular of all the American Delphiniums. They are about 65% mildew resistant and 100% double.

—Black Knight. Darkest violet with black bee; 2½" across.....	DELP-1K. 30¢
—Blue Bird. True blue with white bee.....	DELP-1B. 30¢
—Blue Jay. Clear medium to dark blue with dark contrasting bee.....	DELP-1J. 30¢
—Cameliard. Clear lavender self with white bee; 3" flowers.....	DELP-1C. 30¢
—Galahad. Giant white with white 3" flowers bee.....	DELP-1W. 30¢
—Guinevere. Clear pink-lavender self with white bee; 3" flowers.....	DELP-1G. 30¢
—King Arthur. Rich royal purple, large white bee.....	DELP-1K. 30¢
—Lancelot. Clear lilac self with white bee; a rare Delf color.....	DELP-1L. 30¢
—Percival. Large glistening white, strong contrasting black bee.....	DELP-1P. 30¢
—Round Table. All the colors plus many beautiful hybrids.....	DELP-1R. 30¢
—Summer Skies. Light heavenly blue with white bee.....	DELP-1S. 30¢
—Series Blend. Hand made blend of the above.....	DELP-1X. 30¢

ANY OF THE ABOVE SERIES: ¼ Oz. \$1.00; Ounce \$3.00; ¼ Lb. \$9.00.

—Blackmore and Landon Type. The English strain of giants.....	DELP-2L. 30¢
—Hollyhock Strain. California strain of light shades.....	DELP-2H. 30¢
—belladonna, True. Clear blue; these will do fine in hot sections.....	DELP-2B. 25¢
—Blue Grotto. Deep indigo-blue; 3 ft; excellent for cutting.....	DELP-2G. 25¢
—Cliveden Beauty. Lovely turquoise blue; excellent for cutting; 3 ft.....	DELP-2C. 25¢
—Cardinale. Belladonna type; scarlet flowers.....	DELP-2D. 30¢
—bellomusum. Rich deep blue with white bee; 2" fls; cutting.....	DELP-2M. 25¢

D. CHINENSIS: While these are perennial they are best treated as annuals from early started seed. They are robust growers and rarely need staking; fine for cutting.

—Blue Mirror. NEW type; light blue, without spurs; facing upwards.....	DELP-3M. 25¢
—Blue Butterfly. Dwarf; ultramarine-blue; 12" tall.....	DELP-3B. 25¢
—White Butterfly. Blooms first year; white fls; for border or bedding.....	DELP-2W. 30¢
—Azure Fairy. Dwarf; azure-blue; 12".....	DELP-3A. 25¢
—Cambridge Blue. Rich belladonna blue; 15".....	DELP-3C. 25¢
—Tall Blue. 24-30 inches tall; for cutting.....	DELP-3T. 25¢
—Tall White. 2-3 feet tall; white flowers; bedding or cutting.....	DELP-3W. 25¢
—Dwarf Mixed. Plants 1-1½ ft. tall.....	DELP-3DX. 25¢

DELPHINIUM SPECIES:

—bicolor. Erect western; 20 inches; blue; dies in summer.....	DELP-9. 25¢
—decorum. Deep purple fls; 4-6" for the rock garden.....	DELP-32. 30¢
—incanum.....	DELP-52. 30¢
—macrocentron. From S. Rhodesia; 5'; fls hanging blue or yellow 5 ft.....	DELP-58. 50¢
—Mensiesii. Deep blue; western species; 4-6 ft; HP.....	DELP-59. 40¢
—nudicaule, Chamois. Long spurred; fine rock garden; 1 ft; HP.....	DELP-62C. 30¢
—Scarlet. Red Larkspur; 1 ft; HP.....	DELP-62S. 30¢
—Parryi. Deep blue; S. Calif.; 3 ft.....	DELP-71. 30¢

DATURA. (dah-TEU-rah) Solanaceae.

Annuals and perennials found in warm regions, some of which are ornamental on account of their large trumpet-shaped flowers. They should be treated as tender annuals in northern part of the U. S. Start early indoors.

—arborea. Angel's Trumpet. Small trees; lge white fls; musk-like odor.....	DATU-1. 20¢
—ferox. Light blue fls.....	DATU-9. 20¢
—Metel. Large double whitish fls, purple calyx, 5'; TA.....	DATU-11. 20¢
—caerulea. Blue flowers of above.....	DATU-11C. 20¢
—meteloides. Fls white tinged rose; fragrant; 5 ft; TP.....	DATU-13. 20¢
—Stramonium. Fls erect, white or violet; 5 ft; TA.....	DATU-18. 20¢
—Tatula. Fls erect; purple; 5 ft; TA.....	DATU-22. 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

The Dianthus Species

D. Allwoodii. Ahardy hybrid race of *D. plumarius* and *D. caryophyllus* and comes in brilliant colors, neat habit, long flowering season and ease in culture. It makes especially good cut flowers with strong clove scent and we especially recommend them for both garden display and for cutting. 12-15 inches tall.

D. A. alpina. Flowering the first year from seed, these hybrids were developed from *D. Allwoodii* crossed on such species as *D. alpinus*, *caeseus*, etc., and then re-crossing the progeny with each other. 4-8 inches tall, in many colors with many different colored centers; very fragrant and an excellent kind for rock garden; likes a limey soil.

D. alpinus. This species is considered by many the best of the *Dianthus*. Native of many mountain range in Europe and comes in enormous flowers of a beautiful rose-crimson, the petals overlapping to form a flower of substance. The species is very variable but it has few inferior plants. There are many beautiful varieties, some of which are listed below. Always select those with flowers with overlapping petals. We would also like to hear from anyone knowing of the old variety of this species called *Adonis*. It had huge flowers that opened a beautiful salmon-pink and changed with maturity to a delicate pearl-white. It was found by Farrer on the Hoch Schneeberg mountains in the Austrian Alps. The plants grown from seed that have a lighter shade of green than the better part of the lot, can be fairly certain to have white flowers. This is so in *D. deltoideus* as well as some other species.

As a species *D. alpinus* seldom lives more than 3 years, is benefited by an annual top dressing and seedlings should be raised at least every 2 years to keep your stock up.

D. arenarius. Its flowers are daintily fringed and comes in white or pale pink. It is a very desirable rock garden *Dianthus*, very fragrant; six inches tall. It is one of the *Dianthus* that will grow in a little shade where it is fairly cool, flowering into late fall.

D. caesius. Why this pretty little *Dianthus* should be called Cheddar Pinks, from the Cheddar Rocks in England, where but a trace of them ever grew, is unknown, for they are native of Germany and southern Europe. They are 4-5 inches tall, are formed in little cushion of blue-gray, shapely pointed leaves. The flowers are usually prettily fringed with a delicious fragrance.

It has many uses in the garden and is an ideal rock garden plant. I would especially recommend this pretty little *Dianthus* to every flower grower. It's correct botanical name is however *D. gratianopolitanus*.

D. brachyanthus. A very nice cushion type *Dianthus* about 8" high, with rose flowers whose petals are nearly entire; the leaves are very narrow and short and a beautiful rock garden sort; Spain.

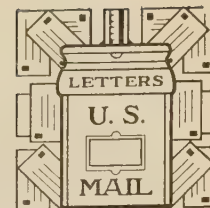
D. crinitus. The flowers are usually white and with petals 1½-2 inches long cut into hair-like divisions in a fantastic manner. It comes from Asia Minor and most likely will do best in a dry hot situa-

(Continued on page 32)

Your June Garden Record

These two columns have been reserved for your own garden record for the month. Make notes on what should be done next year at this time; new plants added this month and many other reminders that will be of value in your gardening operations. The SAIER'S GARDEN MAGAZINE is designed to be useful next year as well as this and copies will be valuable for future references. Indexes will be provided in later issues so that a quick reference can be made to items of interest, especially descriptions and culture.

THE MAIL BOX



IRIS PUMILA.

The following letter was received from Mr. Welch regarding the article on page 8 on the possibility of *Iris pumila* losing its very dwarf characteristics by being grown in rich soil because in its natural habitat it "grows in a poor stoney soil". There is a lot of that in Mr. Welch's letter.

The so called *Iris pumila* is merely derivatives of *I. chamaeiris* or *chamaeiris* varieties. There is no *I. pumila* blood in them. To state that their added height is due to culture or soil conditions is a misconception. No form of *I. pumila* ever grows over six to seven inches under the most perfect conditions and to consider twelve inches in height is absurd.

I grow all of the various forms of *I. pumila* under the best of conditions and practically all of them are from three to four and a half inches high. If you must be convinced by other means than mere height, I recommend that one study their "pumila" plants and note the other characteristics than mere height. *I. pumila* is very early blooming, coming a week to ten days before the main crop of *chamaeiris* varieties; it is about two to three inches high, in other words you will find the seed pod at the bottom of the stalk instead of the top, it is practically resting on the rhizome. It has rather small spathe valves, loosely wrapping and shapeless, the upper parts almost scarious and often tipped with reddish color reminiscent of an onion skin.

There are several other distinguishing marks but this should suffice to show that these plants are not the true *I. pumila*. Also I recommend that *I. pumila* be grown in rich soil, with some compost and limestone added for best results, and one will still get plants from three to five inches high.

By Walter Welch, Indiana.

WHERE THE SEEDS COME FROM.

We often have as many as 5,000 different kinds of seed on hand and where these are all grown, is a quite common question.

Naturally, no one could grow that many kinds of plants for seed purposes.

However, we do try to grow many of the hard-to-find species, but we are limited as to help, proper soil or climate as well as other causes. Then there are the large commercial growers who grow such flowers as the Zinnias, Asters, Sweet Peas, etc. This source is always reliable, certain and very economical. Next comes the many private growers, who make a speciality of certain flowers.

But on many of the rarer sorts we depend upon collectors, all over the world. We might mention here, too, that these are two classes of collectors, viz., the person who is an experienced botanist and able to go into remote sections, and collect the different kinds. The other collector is he who lives in a section where a certain flower is native. Many of the *Penstemon* species have been secured in this way.

We are always glad to contact readers who are so situated. It will be the means of distributing flowers in every section of the world.

Growing Lilies from Seed

Much of the following is taken from a news letter of the North American Lily Society and written by S. L. Emsweller and G. L. Slate and which we acknowledge with thanks.

The easiest and least expensive way to build up a collection of lilies is to grow them from seed. This method also has the added advantage of assuring virus-free plants.

As regards seed germination Lilies come in two types. In one the seed germinates rapidly and the seedlings reach flowering size the first or second year at most. The other class require more time to germinate and thus receive a different treatment.

The following Lilies, if planted in the fall will appear the next spring or if planted in the spring they will appear above ground in a short time:

- L. amabile
- L. callosum
- L. candidum
- L. cernuum
- L. concolor
- L. Davidi
- L. dauricum
- L. elegans and its varieties
- L. formosanum
- L. Henryi
- L. Leichtlinii var. Maximowiczii
- L. leucanthum var. chloraster
- L. longiflorum
- L. myriophyllum
- L. neilgherrense
- L. nepalense
- L. pumilum
- L. regale and its hybrids
- L. Sargentiae
- L. taliense
- L. umbellatum and its varieties
- L. Wallichianum
- L. Willmotiae variety of Davidi

Lilies Requiring Two Years to Start

The following, the two year class if planted in the fall will not appear above ground until the second spring following unless given special treatment:

- L. auratum
- L. Backhouse hybrids
- L. Bellingham hybrids
- L. Bolanderi
- L. Brownii var. cholchesteri
- L. canadense
- L. carolinianum
- L. chalcedonicum
- L. columbianum
- L. distichum
- L. giganteum
- L. Humboldtii
- L. Kelloggii
- L. maritimum
- L. michiganense
- L. pardalinum
- L. parviflorum
- L. philadelphicum
- L. pyrenaicum
- L. rubescens
- L. superbum
- L. Szovitzianum
- L. carniolicum
- L. Cathyarum
- L. Catesbaei
- L. cordatum
- L. Duchartrei
- L. Grayi
- L. japonicum
- L. Martagon
- L. monadelphum
- L. occidentale
- L. Parryi
- L. parvum
- L. pomponium
- L. rubellum
- L. speciosum
- L. tsingtauense

It is now known that most of the slow germinating kinds require from 3-6 months at about 68-70 degrees F to start germination followed by 2 months at 32-40 degrees F., or over wintering outdoors to break the dormancy. Such germination the next summer forming a tiny underground bulblet. This will not send up a green shoot until it has been chilled by winter cold or given other cold treatment.

It is advisable to separate lily seed into the rapid and slow germinating types and plant each separately. The seed may be planted

in flats, in frames, or in open beds. The soil should be fertile, well drained and contain enough sand and humus to resist baking. A good friable garden loam is very satisfactory for outdoor planting. For flats and frames a mixture of loam, granulated peat and sand in about equal parts works well. The seed should be covered about 1/2" deep when planted in flats, and from 3/4-1 inch when sown in frames or open ground. It is good practice to space the seed about 1/2 inch each way in the flat, and about 1/2 in rows six to 8 inches apart in a frame or open ground bed.

When Seed May Be Started

Both types of seed may be planted in late fall or early winter, or held over and planted in April or early May. The quick growing lilies should not be planted too early in the fall, because they may germinate and be killed by subsequent low temperature.

With both types of lilies sterilized soil is an advantage for the seed bed. Spraying the seedlings every 2 weeks with Bordeaux mixture or using copper lime dust to control the Botrytis disease is good practice. During the hottest part of the summer the seedlings should be protected with lath or coarse cloth shade.

In late fall after the first growing season of the seedlings above ground, the beds or flats outdoors should be mulched to prevent heaving out of the bulblets during the winter. Sawdust, peat, glass wool or vermiculite are good materials that will not harbor mice which may cause damage if straw or hay are used.

If refrigeration is available the germination of slow growing lilies may be speeded up by starting the seed, as soon as ripe, in moist peat or vermiculite in small mason jars or half-pint milk bottles. The seed is mixed thoroughly with the peat or vermiculite and the entire mass moistened. It is then placed in a jar or bottle that is covered with wax paper or some material to prevent drying out. The container is then stored at a temperature of 68-72 degrees F. After 4-6 months the seed will have germinated to form tiny bulblets. The container should then be moved to a refrigerator and stored for from 2-3 months at 32-40 degrees F. Following this the tiny bulbs may be planted about one inch deep in flats or outdoor beds. Shoots will appear above ground in a few weeks, at temperatures around 65-70 degrees F. This method speeds up the entire process, and saves at least one year with lilies of this type. If started in August, seedlings may be had the next spring rather than a year later.

Another Planting Method

Another method used by Mr. G. L. Slate and not requiring a refrigerator is to plant seeds in the spring or early summer, before July, in flats in the usual way. The flats are then stacked one above the other in the cellar where they remain till October with inspection about once a month and watering if this is necessary to keep the soil damp. During this time the seeds germinate to form small underground bulblets. In early winter the flats are transferred to cold frames and carefully mulched. In the early spring the mulch is removed and the seedlings appear above ground. They are then grown on as with other methods.

If lily seed has been planted in good fertile soil, it is not likely that any further fertilization will be necessary. If the seedlings leaves are light green in color and growth

is slow, a complete fertilizer, such as a 5-10-5 may be used. If the seedlings are in flats, they may be watered with a solution made by dissolving about 2 tablespoonsful of the 5-10-5 fertilizer per gallon of water. In open beds or frames a small handful of fertilizer to a three-foot row of seedlings should be ample.

Lily seedlings are usually left in the flat or seed bed until the bulblets are at least 3/8-1/2" in diameter. This may be at the end of the second growing season or even earlier with quick growing kinds. They should then be transplanted to a nursery row to attain flowering size or may be planted in their permanent location. The small bulbs should be covered about 3" deep. Transplanting may be done in late summer while the tops are green or later in the fall when the tops have been killed by the frost.

An Ideal Compost Box

Every gardener should have a box to make compost from his weeds, grass, table scraps, etc., is almost a necessity.

For size a box about 4 x 6 feet and about 3-4 feet high is about right. If 2 of these are made and so as to stand about 2 feet apart, dry leaves can be put in this space.

Make the box of 6 inch boards with an inch space between each board and also make the sides so that the bottoms are 2-3 inches longer than the top, so as to allow the material in the box to settle down easily.

In starting the compost place weeds, grass and such materials in the bottom, after which the kitchen scraps can be added each day. Some soil is best added as the box is filled as well as Active, a couple times a week.

Line in some form is also good to sprinkle on the green material.

If you box is too large, it will be necessary to roll up some chicken wire into a 6" "chimney" and set this up in the middle of the box for air.

When two boxes are made one can be standing while the other is being filled.

If the bottom 2 boards on one of the long sides is made into a door to swing upwards, it will make an easy way to start taking the compost out of the box without disturbing the top part not yet decayed.

Some times these boxes can be placed behind a building (close to the garden) so that the water from the roof can be diverted ply is necessary so that the material can be into the boxes when needed, but a water supply in a moist condition and not allowed to "burn".

It is not necessary to have bottoms in the boxes. These boxes are inexpensive and easy to make. They provide a convenient place for the refuse around the house and garden and can be easily converted into valuable compost.

Course materials like corn stalks, should be cut up some when placed in the box. If you keep poultry, the manure from this will make a valuable addition, especially if used regularly and not in any great quantity at a time.

You may find it necessary to make a sort of screen of chicken wire for the top to keep cats out of the boxes and a rat trap in the corner to catch them if they bother; they make excellent compost, too!

STARTING SOME TREE SEEDS

Many tree seeds are hard to germinate but when started in pots, they are not only easily started but can be transplanted to the open ground with no set back.

Seeds of the Oaks, Chestnuts and Norfolk Pine should be planted with the sharp edge down and half of the seed above the soil surface.

DIANTHUS GENUS - CARNATIONS

DIANTHUS. (die-ANTH-us) PINKS, CARNATIONS. Caryophyllaceae.

A very large genus with many horticultural varieties. They are rather hardy and range in height from very low plants to 2-3 feet. They all do best in rather good garden soil, well drained and some even in raised beds. One thing in common in never to cover the tops with a winter mulch. Shearing the plants in the fall or early spring tends to keep them in shape. The annual sorts should be started early indoors and the perennials anytime up to August. We will list them by the species in the following list.

—**Allwoodii.** Hybrid in good color range, similar to *D. plumarius*; HP.....DIAN-2. 25¢
—**alpinus.** Fls 1½" ac; on stems 2-4 in. high; various colors with eye; HP.....DIAN-3. 20¢
—**arenarius.** Fringed fls, frag., white, cream, pink; 6"; HP.....DIAN-9. 20¢

DIANTHUS BARBATUS: Sweet William. While they are perennials they are best grown as biennials; 1-2 ft. tall; make cutflowers late in the season.

—**Single Annual Mixed.** Fls first season; start early.....DIAN-17A. 20¢
—**Dunnettii.** Blood-red fls; best in this type.....DIAN-17D. 15¢
—**Harlequin.** White, rose and red shades on same head; pretty.....DIAN-17H. 15¢
—**Hunt's Perfection.** Auricula-eyed flowers; fine.....DIAN-17P. 15¢
—**Johnson's Diadem.** Brilliant dark scarlet with large white eye.....DIAN-17J. 15¢
—**Newport Pink.** Beautiful single salmon-rose.....DIAN-17N. 15¢
—**Pink Beauty.** Charming strain in shades of salmon-pink.....DIAN-17R. 15¢
—**Purple Beauty.** Deep purple, single flowers.....DIAN-17S. 15¢
—**Single Dark Crimson.**.....DIAN-17C. 15¢
—**White Beauty.** Pure white.....DIAN-17W. 15¢
—**Dwarf Double Mixed.** A one foot tall strain.....DIAN-17WX. 15¢
—**Double Mixed.**.....DIAN-17DX. 15¢
—**Sweet William Blend.** All varieties and types.....DIAN-17X. 15¢

—**caesius:** see *D. gratianopolitanus*.
—**deltoides.** Maiden Pink. Small rosy purple fls; turf type; 6"; HP.....DIAN-45. 15¢
—**Bowles Variety.** Bronze foliage, vivid carmine fls; HP.....DIAN-45B. 20¢
—**Stern's Variety.**.....DIAN-45S. 25¢
—**Brilliant.** A brilliant rich rose-pink; 6"; HP.....DIAN-45L. 15¢
—**erecta.** Crimson fls on short erect stems, extra good for RG.....DIAN-45E. 20¢

D. caryophyllus: The various types of Carnations come under this species. Most of are not real hardy in the far North but can be grown never the less in many gardens with some protection. Space plants 1 ft. apart and get them well started before winter.

—**Giant Perpetual.** Clove Pink. Largest; in all colors.....DIAN-12P. 25¢

CHABAUD'S CARNATIONS: Everblooming Carnations...Sow seed in Jan.-Feb. One of the best hardy outdoor Carnations.

—**Cardinal Red.** Beautiful shade.....DIAN-12C. 25¢
—**Deep Rose.**.....DIAN-12Z. 25¢
—**Jeanne Dionis.** Pretty pure double white.....DIAN-12J. 25¢
—**Enfant de Nice, Mixed.** Beautiful strain, 75% true; 90% double.....DIAN-12E. 25¢
—**Etincelant.** Bright scarlet; 90% double.....DIAN-12T. 25¢
—**Legion of Honor.** Salmon rose.....DIAN-12L. 25¢
—**Marie Chabaud.** Pure yellow.....DIAN-12Y. 25¢
—**Nero.** Blood-red flowers.....DIAN-12N. 25¢
—**Rose Queen.** One of the best rose colors.....DIAN-12Q. 25¢
—**Ruby.** Dark red.....DIAN-12R. 25¢
—**Striped.** Flowers striped red.....DIAN-12S. 25¢
—**Giants of Nice.** Robust giants, 90% double.....DIAN-12G. 25¢
—**Teicher's Strain.** High class Carnation strain.....DIAN-12T. 25¢
—**Tige de Fer, Mixed.** Iron stem Carnations.....DIAN-12F. 25¢
—**Carnation Blend.** Many types and strains.....DIAN-12X. 25¢

—**chinensis.** Rainbow P. Grow as annual; single fls; HA.....DIAN-13. 15¢
—**Imperator.** Double strain giant flowers, HA.....DIAN-13P. 20¢
—**Hedewigii.** Hardy annual Pinks, mixed.....DIAN-13HX. 15¢
—**Dwarf Single Mixed.**.....DIAN-13DX. 15¢
—**Mourning Cloak.** Dark purple with lained edges.....DIAN-13HM. 15¢
—**Salmon Shades.**.....DIAN-13HS. 15¢
—**Fireball.** Double deep sarlet.....DIAN-13HF. 15¢
—**Lacinated, Mixed.**.....DIAN-13HL. 15¢
—**Snowball.** White lacinated flowers.....DIAN-13HS. 15¢
—**Double Mixed.**.....DIAN-13DX. 15¢

GRENADIN CARNATIONS: Hardy border Carnations growing 15" tall. Excellent for the general garden growing where the Carnation type is wanted.

—**King of the Blacks.** Dark velvety brown.....DIAN-12GK. 15¢
—**Rosy Morn.** Pretty rose colored variety.....DIAN-12GR. 15¢
—**Scarlet Morn.** Best red variety.....DIAN-12GS. 15¢
—**Tausendschon.** Delicate rose to salmon-rose; excellent.....DIAN-12GT. 15¢
—**White Queen.** Pure white.....DIAN-12GW. 15¢
—**Yellow Queen.** Best yellow variety.....DIAN-12GY. 15¢
—**Grenadin Carnation Blend.**.....DIAN-12GX. 15¢
—**Giant Malmaison.** Largest, fragrant, most satisfactory for garden.....DIAN-12GM. 30¢

MARGARET CARNATIONS: Considered the most satisfactory Carnation for the average garden. It is early and, except where the winters are severe, it will live 3-4 years. If started real early in the spring, flowers can be had the first year.

—**Red Marge.** Best red variety.....DIAN-12MR. 15¢
—**Yellow Marge.** Best pure yellow variety.....DIAN-12MY. 15¢
—**Rosy Marge.** Rosy pink variety.....DIAN-12MZ. 15¢
—**White Marge.** Best pure white variety.....DIAN-12MW. 15¢
—**Margaret Carnation Blend.**.....DIAN-12MX. 15¢
—**Raviera Market.** Showy blend of large double flowers.....DIAN-12MR. 25¢

HARDY DWARF CARNATIONS: These are biennial but best treated as annuals, and if started fairly early will give an excellent show by summer. They are early, fine bloomers, double and in bright colors, 15" high. Excellent for bedding.

—**Dwarf Vienna, White.** Pure white variety.....DIAN-12VW. 20¢
—**Rose.** Best pure rose colored variety.....DIAN-12VZ. 20¢
—**Mixed.**.....DIAN-12VX. 20¢

DIANTHUS listing continued on page 34.

This seed list continues from page to page and from issue to issue and runs alphabetically.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

The Dianthus Species

(Continued from page 29)

tion with not too rich a soil.

D. deltoides. Just why this is called the Maiden Pink, I do not know but it comes from Japan, across Asia and Europe to the U. S. A. It is wrongly known by many names. It is a very easy Dianthus to grow and after once being started you will always have it but it is not invasive. It is variable and thus there are many fine varieties.

It is a mat forming type, 8-15 inches tall flowers are small, ¾ inch across, red, pink with crimson eye and white. It will make a fine display in any garden.

D. d. Bowles variety This has very dark green leaves; flowers of intense deep crimson-red. A fine variety.

D. d. erecta. Deep crimson flowers on erect plants, 6-12 inches high and a fine variety for bedding or cutting.

D. fragrans. More like a small *D. plumarius* to 1½ ft. Flowers are very fragrant and comes in rose-white and spotted, native of the Caucasus. Very nice.

D. giganteiformis. This comes to us from Austria and as we understand from the late Dr. Lempreg. We will report more of this from our own plants. It is a form of *D. carthusianorum*.

D. Knappi The only yellow Dianthus, grows 18 inches high and is very liable to come true from seed even when grown amongst other species. We have plants, however in a salmon and dark pink. It is not a long lasting species nor is it as decorative as most Dianthus but it a challenge to the hybridist.

D. La Bourbrille Most likely a hybrid of *D. caesius*, neat and valuable rock garden plant; dwarf, tidy and tufted habit with silver-gray leaves; flowers fringed, bright pink on short stems, free flowering.

D. liboschitzianus Bears one large flower on each stem, arching, 9 inches. The color is white or pale pink; give a sunny sheltered nook.

D. monspessulanus This species is no doubt the same as *D. fimbriatus*; the name is from Montpellier and has been known since 1764. It would be a good species to naturalize among rocks, etc. The flowers are deeply fringed in various shades of pink and is very fragrant. In our own plantings we are selecting the prettier colors, with deeply fringed flowers as well as attractive foliage.

D. neglectus. One of very few Dianthus that prefers a lime free soil but will tolerate some lime in the garden. It is variable with fringed and plain petals, light to dark pink, salmon-pink and to brilliant crimson. It is a diminutive type with flowers up to 1 inch across; native of the Swiss and Tyrolean Alps. Tufted habit with very short grass-like leaves, slightly glaucous.

It is a very good rock garden plant or for growing in pots. Odorless flowers, petals tawny underneath.

D. nigricans A race of *D. barbatus*, having dark foliage and stems; flowers are also dark red, 18 inches, hardy biennial.

D. petraeus A mat forming, 6-12 inch species with fragrant flowers ¾ inch across and narrow, shapely leaves. Flowers usually one on a stem, pink and deeply and ir-

(Continued on page 34)

THE MODERN IRIS A FAVORITE

Lieut. de Chavagnac

When an Iris blooms in season, that is usually in May, we take that as granted but there some varieties that give a second crop of bloom in the fall, perhaps from September until frost. These are called Fall Bloomers or Rebloomers, the French call them Remontants.

You can find numerous varieties listed in this group. Some popular varieties are: Autumn Queen, Autumn Sunset Dorcas Hutcheson, Jean Siret, Kansas Ingleside, Lieut. de Chavagnac and September Skies, and there are others. Ordinarily these Fall Bloomers are Intermediates and the Sass Brothers say they get the fall blooming habit from the Dwarf Iris.

Sometimes these Fall Bloomers have not been very dependable, and unless the fall was late and moisture conditions favorable, disappointment was experienced. However, there is one variety that can be depended upon to give a good crop of bloom every fall, and that is the Dwarf Iris variety Lieut. de Chavagnac. I have grown it here in Indiana for about eight years and it has never failed.

This Iris received a Certificate of Merit from the Horticultural Society of France in 1926 as a Remontant, and the first shipment to America was to Robert Wayman, New York in 1927.

Apparently this variety is of the chamae-iris type; it is about 10 inches high, has red purple standards and blackish purple falls with some reticulations at the haft and a yellow-orange beard. It increases very rapidly, which probably accounts for its reblooming habit.

There are a few cultural rules that will encourage this reblooming habit. First, it should be separated or divided quite often, to give sufficient room for new growth and at this time compost and some fertilizer applied. Immediately after spring bloom is a good time to do this, about every two years. Then a reasonable amount of moisture should be supplied during the summer and especially from August on until it blooms again. A little mulch around the base will conserve moisture during the hot months.

Jean SIRET is another variety by the same breeder, Chas. Andre, but it is not as persistent a bloomer as the Lieut. This one is yellow. It should be possible to develop a full line of colors in this class, as seedlings from Lieut. Chavagnac have produced even whites.

Dykes states that the species *I. rubro-marginata* has bloomed for him upon several occasions, and I have had bloom from it often here. A cross of (Lieut. Chavagnac x *I. rubro-marginata*) should give good prospects of producing some excellent and dependable Fall Bloomers.

NOTE: We are very anxious to further any efforts of our readers in hybridization, not only in Iris but all other flowers. Questions and problems will be welcomed and we will do our best to have them answered.

Those having seedlings of Iris of their own raising should furnish us with one or two rhizomes for our trial ground and if we find that it has real value, we will be glad to cooperate in marketing it.

Mr. Welch is one of our best posted Iris men and his articles which will appear each month in our Iris column will be of considerable interest. Questions on hybridizing Iris will be gladly answered.

Breeding the White Iris

By Walter Welch, Indiana.

Today one sees white Iris everywhere, it is the mainstay of every good collection. In fact, whites are the most highly developed of any form in our gardens. It is the great peacemaker and will harmonize a planting of clashing colors or serve as a foil for brilliant reds and blues. White Iris should be used in abundance in the borders and is gorgeous as a border for paths and drives planted alone.

White Iris are comparatively a modern product, seldom is it found growing wild among the species. Probably the oldest known white Iris is the species *I. albicans*, which comes from Arabia and was used by

Gudrun. He goes in for ruffling, wide horizontal falls, clean hafts and white beards. There is no doubt that these are desirable improvements. Snow Flurry with its cool ruffling, is a landmark in the development of the whites, and its notable progeny is numerous. At this date, probably Helen McKenzie is our finest white Iris but such varieties as New Snow, Lady Boscawen, Katherine Fay and Spanish Peaks have many adherents. The one pure immaculate white of all is Priscilla, though it is smaller and less pretentious.

All of these whites are what we call dominant whites, as opposed to the recessive whites such as MATTERHORN and JAKE. It is easy by crossing any of these varieties, to obtain a wide range of forms, from which you can select most any type that you prefer. It has been the practice with our modern

It will soon be Pansy Planting Time

THE NEW PANSY 101

This special strain of market grower's Pansy was developed with strict attention to the requirements of growers of top quality bedding and basket plants.

It is a full blend of colors with the flower type and blotching generally characteristic of the "English" Pansy type. Plants are compact and very uniform, bearing quantities of giant waved flowers of excellent substance held high on stout stems.

Pansy seed for spring trade can be sown during July; the farther north you are the earlier in July the seed should be started. In the south the seed should be started later so as to avoid the hot weather which is very harmful to Pansies.

This is a top quality strain bred strictly to specifications. Approximately 22,000 seeds per ounce.

Packet 30¢; 1/4 Ounce \$3.00.



the Mohammedans to decorate their graves and by this means was distributed over most of Europe and even to America.

But, strangely enough our modern whites did not originate with this plant. Sir Michial Foster developed our early whites from other sources in Asia Minor; Miss Wilmott is probably the progenitor of today's whites. One of the first large whites that gained renown is GUDRUN, raised by W. R. Dykes and it is still a favorite among the great majority of Iris growers today. It is still the largest white Iris, and about the only criticism ever voiced against it is that it is too large for its height.

Not only is GUDRUN a fine Iris itself, but it is a wonderful parent of other fine Iris. It will give size of bloom to its progeny and is thoroughly hardy. Some of its modern children are Franconia, National White, Snow Carnival, Blue Blazes and numerous others.

The Iris connoisseur of today has become fastidious in his taste and no longer is impressed with the sturdy and solid quality of

breeders to use a good blue variety in combination with these dominant whites, which they claim makes them cleaner and more white. For example Lady Boscawen is from (Purissima x Cloud Castle), the latter a blue variety, and Katherine Fay comes from (Gloriole x Seedling), Gloriole being a light blue. From such a cross you could expect to get both white and light blues.

GERMINATING BEGONIAS.

Each grower will find some one method the best for his conditions, thus there is usually few set rules to follow, not only with Begonias but in all other flowers.

Sow the seeds in sifted garden soil; in pure washed sand; in sandy garden soil; and in leaf mold, the results were good in the sand and leaf mold, a few in the sandy garden soil and none in the sifted soil.

The most probable answer to this test is that the garden soil was too compact, not only hard on the surface but more likely lacked oxygen. A good rule in germinating small seed is to have a rather open soil and leaf mold or sand is always of benefit.

DIANTHUS A SPECIALTY OF OURS

Dianthus Continued from page 32.

HYBRID PINKS: All the crosses in Dianthus are listed here. They all are very nice and should be in every border planting.

- Sweet Wivelsfield. Distinct race; various shades; very good; 12"; HP.....DIAN-68W. 15¢
- La Bourbille. Very dwarf silver mats; pink fls; 12"; HP.....DIAN-68B. 25¢
- Knappii. Lemon yellow; the only yellow Dianthus.....DIAN-71. 20¢
- latifolius atrococcineus. Erect, double, glowing crimson; 12"; HB.....DIAN-73A. 15¢
- Liboschitzianus. White fls; Caucasus; 12"; HP.....DIAN-76. 25¢

PLUMARIUS: Grass or Clove Pinks. This is one of the best species for the border. They grow about 12" tall and in both double and single flowers; the singles make a beautiful display in the front of the border. They come in white and all shades of pink and red, with contrasting eye. They are all real hardy; all perennials; germinate in 5 days.

- Perpetual Dwarf Harlequin. White, rose and red fls on same stem.....DIAN-99H. 20¢
- Mayflower. Early dwarf double, nice blend of colors.....DIAN-99M. 20¢
- Mrs. Sinkins. Pure double white.....DIAN-99K. 30¢
- Rose of May. Large double rose; 6"; HP.....DIAN-99Z. 20¢
- Double Mixed.....DIAN-99DX. 25¢
- Single Mixed.....DIAN-99SX. 20¢
- Scoticus Mixed. Special florist strain, many colors with bright eye.....DIAN-99S. 25¢
- D. Plumarius Blend. All kinds mixed.....DIAN-99X. 20¢

- hyssopifolius. (monspessulanus) Deeply fringed, frag.; mixed col; 1'; HP.....DIAN-67. 15¢
- monspessulanus: name changed to D. hyssopifolius which see.
- neglectus. Glacier Pink. Small crimson-pink with lighter eye.....DIAN-89. 25¢

DICRANOSTIGMA. (die-kray-no-STIG-ma) Papaveraceae.

Plants from central Asia, orange or yellow flowers. Best in light soil.

- Franchetianum. Bright yellow fls; 1ft; HB.....DICR-1. 20¢

DICTAMNUS. (dik-TAM-nus) Fraxinella, Gas Plant, Burning Bush. Rutaceae.

A garden favorite that makes large clumps with good sized and showy flowers with a strong lemon scent. They dislike transplanting and enjoy a rich soil. Seeds germinate very slowly.

- albus. The white flowered species HP.....DICT-1. 25¢
- rubra. Rosy purple fls; 3 ft; HP.....DICT-1R. 25¢

DIDISCUS: See Trachymene.

DIGITALIS. (dij-ah-TAL-is) FOXGLOVE. Scrophulariaceae.

Erect biennials and perennials, favorites in the garden. Their stately spikes, 3 ft. high are crowded with thimble-like flowers, beautifully spotted. Easily grown from seed sown in the spring or summer for flowers the next season.

D. PURPUREA: The common Foxglove. It is a biennial and there are many improved forms and varieties being introduced in this species.

- gloxinaeflora. Pink spotted fls, more open than other forms.....DIG-1. 15¢
- The Shirley. Giant hybrids in good colors, extra choice; 5 ft.....DIG-1S. 15¢
- White. Pure white flowers.....DIG-1W. 15¢
- Pink. Deep rose flowers.....DIG-1Z. 15¢
- Blend. Blend of above varieties.....DIG-1X. 10¢

Other Digitalis Species:

- grandiflora. Yellow fls; 3 ft; HP.....DIG-7. 20¢
- lutea. Yellow flowers; 2 ft; HP.....DIG-11. 25¢
- orientalis. Fls cream striped red on lower lip; not hardy in N; 3'; TP.....DIG-18. 25¢
- Digitalis Blend. All above species.....DIG-X. 15¢

DOLICHOS. (DOL-ik-oos) Leguminosae.

Rapid annual climbers, 10 ft. or more, with Wisteria-like flowers in red or white, followed by attractive pods; dislikes transplanting. All tender annuals. Sow in spring.

- Lablab. Hyacinth Bean. Fls purple or white, rapid climber.....DOLC-4. 15¢
- Soudan. Dark leaves, purple flowers.....DOLC-48. 20¢

DORONICUM. (doh-RON-ik-um) LEOPARD'S BAND. Compositae.

Herbaceous perennials, daisy-like flowers in yellow; blooms early in spring. Prefers sun and rich soil. Easily grown.

- caucasicum. Grows to 2 ft., nice in the border, HP.....DORO-2. 20¢
- magnificum. A more robust type with larger heads; 3 ft; HP.....DORO-2M. 25¢

DRACOCEPHALUM. (dray-koh-SEF-ah-lum) DRAGONHEAD. Labiatae.

Hardy annual and perennial plants with blue, purple or white flowers in whorls. They make pretty groups in most shady spots in the border, where the flowers last longer than when in sun. Easily grown from seed.

- Moldavica. Charming border plants, 1 ft; HA.....DRPH-14. 15¢

DRYAS. (DRY-as) Rosaceae.

Mountain Avans. Dwarf evergreen prostrate plants for rock garden. A very hardy perennial for well drained porous soils.

- octopetala v. ianata. Lvs white-woolly; fls white, HP.....DRY-5. 25¢

ECHINACEA. (ek-i-NAY-she-ah) CONEFLOWER. Crassulaceae.

Native perennials closely related to Rudbeckia; bushy growth and daisy-like flower heads often 6" across. They are fine in the border and for cut flowers, blooming for 2 months. Thrive in rich sandy loams in dry places.

- angustifolia. Showy plant for dry border; rose to purple; 3 ft; HP.....ECHI-1. 20¢
- purpurea. Purple Coneflower. Purple flowers; 5 ft; HP.....ECHI-4. 15¢
- Earliest of All. Early variety.....ECHI-4E. 20¢

ECCREMOCARPUS. (e-krem-oh-KAHR-pus) GLORY FLOWER. Bignoniaceae.

Climbing shrubs from Chile; tubular yellow, orange or scarlet flowers in terminal racemes followed by fruits. Grow it as a tender annual in the North, but it is a perennial in the South.

- scaber. Orange-red fls; start early; warm situation; 12 ft.....ECCR-1. 25¢

ECHINOPS. (EK-in-ops) GLOBE THISTLE. Compositae.

Thistle-like biennials and perennials with flowers in round heads. They are decorative in the border and easily grown from seeds.

Listings Continued on Page 35.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

IPOMAEA Cornell

The unique color of this pretty Morning Glory should make an attractive display. Few have grown it in the past and it is seldom seen.



The color is a pretty cornelian-red bordered white at the edges. It is large and free flowering. The foliage also, is pretty and an attractive green.

Do not sow seeds

till late in May when the weather gets warm. Soak them a little and plant where they are to grow.

DIANTHUS SPECIES

(Continued from Page 32)

regularly cut; July-August; native of E. Europe and found in poor soils so do not expect too much from it in rich soils; a fine rock garden flower.

A variable species found all over Europe. 20 inches tall, the flower stem terminating in a cluster of small flowers. It is a border subject and many nice selections can be worked up by interested growers. It has been in cultivation since 1573 which speaks well of its value as a garden flower.

D. subcaulis. A pretty little mat type, 9 inches tall, of great value and should be in every garden. Small tufts of dark green fine leaves and short stemmed carmine colored flowers; easy to grow in any well drained, sunny position.

D. Sundermannii A showy species from Greece having white or cream flowers ½ inch in diameter and overlapping petals on square 6 inch stems.

D. Winteri Not a species but a name for plants of border carnation type, varying widely in both habit and color but mainly in shades of pink and deep rose; very graceful and pretty. About 10 inches tall, flowers single and often deeply fringed. Old plants may be layered easily which offers the small grower an opportunity to increase ideal plant selections; in doing this select for plants not too high.

ARE YOU DEAD??

We have received all kinds of letters asking about the catalog; why the delay, etc. But we want to print the card from Dr. V. V. Phelps of Wayne, Mich., recently received.

You have heard and seen people with "green fingers", well Dr. Phelps has "green toes" as well for it seems that about everything he touches, grows. I can imagine his greenhouse, which is only a small place, not over 10 ft. square and here he will have several hundred tin cans with all sorts of plants many of which are rare; few growers that I know could possibly grow so many in such small space.

Following is what he wrote, "Are you dead? Where's the catalog? At least tell me or have your wife tell me. So please, and when you can, come and see me. My greenhouse is packed to the roof. You ought to see it now."

Dr. V. V. Phelps.

ALYSSUM ARGENTEUM.

Compact, 9"-12", species with small oblong leaves, broader at the point than the base, silvery on the underside and dotted above with minute starry gray hairs. Flowers in dense panicles, yellow; April-May. Not suited to open ground where soil is naturally moist.

ECHINOPS ERANTHIS ERIGERON

Echinops Continued from Page 34.

- exaltatus**. (Ritro) Steel blue fls; 2 ft; HP.....**ECHN-4. 15¢**
 —**sphaerocephalus**. Tall growing, 5 ft; light blue; HP.....**ECHN-8. 15¢**

ECHIUM. (EK-ee-um) VIPER'S-BUGLOSS. Boraginaceae.

Annual, biennial and perennials thriving in rather poor soil and sunny positions. Flowers are in blue, purple, rose or white in coiled racemes. They are warm region plants and are grown in California. E. vulgare is a fine bee food in waste places.

- pomponicum**.**ECHM-8. 20¢**
 —**vulgare**. Blue Weed. For bee food on poor soil HB (Lb. \$1.50).....**ECHM-12. 15¢**
 —**Blue Bedder**. New compact, bright blue fls; 1 ft; HB.....**ECHM-12B. 20¢**

EDGEWORTHIA. (eg-WORTH-ee-ah) PAPER BUSH. Thymelaeaceae.

Two shrubs from the far East and closely related to Daphne, bearing fragrant yellow flowers in dense heads followed by fruits. They are not hardy in the North.

- papyrifera**. Small shrub for the South.....**EDGE-1. 20¢**

EDRANTHUS. (ed-er-AN-thus) Campanulaceae.

Low tufted perennials from the Balkan regions and related to Wahlenbergia. Good rock garden plant; 6-12" across. Easily grown from seed.

- circinatus**.**EDRA-4. 20¢**
 —**dalmaticus**. Tufted, 6" high; Dalmatia.....**EDRA-6. 20¢**
 —**parnassicus**. Tufted; bright blue fls in clusters; 3"; HP.....**EDRA-12. 25¢**
 —**Pumilio**. Tight hard silver cushions on which sit lilac-blue fls; 2"; HP.....**EDRA-14. 25¢**

EMILIA. (e-MIL-ee-ah) TASSEL-FLOWER. Compositae.

Annual and perennial plants of low neat habit; native of the tropics. The slender stems are tipped by small rayless many colored flower heads surrounded by white bristles. Grow as a tender annual in the North in sunny place, flowers July till frost. These were listed in the past under Calceola.

- sagittata**. Red or scarlet heads; 2 ft; TA.....**EMIL-1. 15¢**
 —**coccinea**. Small red flowered variety.....**EMIL-1C. 15¢**
 —**Mixed**. Red, yellow, golden orange; TA.....**EMIL-1X. 15¢**

ENKIANTHUS. (en-ke-AN-thus) Eriaceae.

Hardy deciduous shrubs native of Asia. They are of attractive upright growth with long slender clusters of nodding flowers in the spring. Thrive in moist, light soils with peat or leaf mold; easily grown from seed; fairly hardy.

- campanulatus**. Tall sh to 30 ft; yellow or orange fls; brilliant fall fol.....**ENKI-1. 25¢**
 —**himalaicus**. Bright red shoots; red and yellow bells; brilliant fall fol.....**ENKI-6. 25¢**

ERANTHIS. (ee-RAN-this) WINTER ACONITE. Ranunculaceae.

Small tuberous rooted hardy perennials with bright buttercup-like flowers and whorls of shiny leaves in early spring, flowering with the Snowdrops. They are very pretty and should be planted in the rock garden or border. Bulbs can be had in Sept.

- hyemalis**. 6" tall; golden yellow fls, 1½ across.....**ERAN-1. 25¢**

ERIGERON. (ear-RIJ-er-on) FLEABANE. Compositae.

Annuals and perennials resembling wild Asters, in white, rose or violet ray-flowers. They are easy to grow in border or wild garden. A few are good rock garden plants.

- aurantiacus**. Double Orange Daisy. 1-2" heads, 10 in. tall; HP.....**ERIG-6. 20¢**
 —**compositus**. Rays white or purplish; 2" tall; HP.....**ERIG-17. 25¢**
 —**concinus**. Small blue fls; 10 in; May-Aug; essay; HP.....**ERIG-18. 20¢**
 —**Coulteri**. Large white flowered species; moist woods; 10"; HP.....**ERIG-20. 20¢**
 —**glabellus**. Violet or purple rays; 2 in. ac; 15"; HP.....**ERIG-27. 25¢**
 —**Karvinskianus**. White or pink; 18"; blooms first year; HHP.....**ERIG-35. 25¢**
 —**macranthus**. Lilac-purple; 30"; fine clumps in border; HP.....**ERIG-40. 25¢**
 —**multiradiatus roseus**. Rose fls; 3" across; 12 in. HP.....**ERIG-44. 25¢**
 —**salsuginosus**. Large blue fls, 2 in. ac; 18"; very hardy; HP.....**ERIG-55. 25¢**
 —**speciosus**. Dark violet; 2 ft; HP.....**ERIG-57. 25¢**
 —**Erigeron Blend**. Mixture of all kinds.....**ERIG-X. 25¢**

ERIOGONUM. (ee-re-OG-on-um) Polygonaceae.

Plants native of the western U. S. requiring well drained peaty soil and sunny position; fine for the rock garden.

- flavum Piperi**. Yellow fls; 8"; April-May; HP.....**EGON-9. 25¢**
 —**microthecum**. Gray-white mounds; white to rose fl heads; 6"; HP.....**EGON-17. 25¢**
 —**nudum**. White or yellow fl heads; showy; poor soil; 12"; HP.....**EGON-20. 25¢**
 —**ovalifolium**. Bright yellow fl heads, dry soil; sun; RG; 3-6"; HP.....**EGON-23. 25¢**
 —**pyrolaefolium**. Tufted, white to red fl heads; dry soil; RG; 4"; HP.....**EGON-27. 25¢**
 —**subalpinum**. Sulphur Plant. Yellowish white heads, May-June; 1 ft; HP.....**EGON-32. 25¢**
 —**Eriogonum Blend**. All kinds mixed.....**EGON-X. 25¢**

ERIOPHYLLUM. (ear-ee-oh-FILL-um). Compositae.

Annuals and perennials native of western U. S. Flowers yellowish rayed and disk, grown in dry places.

- intergrifolium**. Small Ore. Sunshine. Showy; May-Aug; 10"; HP.....**ERIO-4. 25¢**
 —**lanatum**. Ore. Sunshine. Golden fls; dry place; 12-18"; HP.....**ERIO-6. 25¢**
 —**lanceolatum**. Grows in crevices of hot rocks; dense woolly fol; RG gem.....**ERIO-8. 25¢**
 —**Eriophyllum Blend**. All kinds mixed.....**ERIO-X. 25¢**

ERITRICHUM. (er-ee-TRIK-e-um) Boraginaceae.

Pretty low growing annuals and perennials from the mountains; fine rock garden plants. The flowers are in racemes or cymes and mainly blue and in brilliant shades.

- strictum**. Blue fls, 1¼ in. ac; 10" tall; HP.....**ERIT-6. 25¢**

ERYSIMUM. (e-RIS-im-um) BLISTER CRESS. Cruciferae.

These closely resemble Wallflowers with white, yellow or lilac flowers. They thrive in a sunny exposure and are easy to grow. These are annuals, biennials and perennials, all hardy and the small species are excellent for the rock garden. Sow the annuals where they are to grow.

- asperum**. (Allionii) Dwarf compact deep orange; 12"; HA.....**ERYS-1. 20¢**
 —**Orange Queen**. Pretty orange; HA.....**ERYS-1Q. 20¢**
 —**nana compacta**. Saffron-yellow; very dwarf, RG; HA.....**ERYS-1C. 20¢**
 —**Golden Bedder**. New, golden yellow; 12"; HA.....**ERYS-1G. 20¢**

Seed Listing Continued on Page 36.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

GERMINATION TIME

NUMBER OF DAYS REQUIRED FOR GERMINATION OF FLOWER SEEDS.

Where the (*) is used, the time indicated is variable and the days listed merely indicate the earliest time possible. Many seeds are very variable and the temperature, light, and many other conditions will make a noticeable difference in the actual time required.

Abutilon	20	Gloxinia	15
Acroclinum	15	Godetia	15
Agapanthus	20	Gourds	15
Agathaea		Gypsophila	20
coelestris	20	Helianthus	15
Ageratum	5	Helichrysum	5
Ampelopsis	15	Heliotrope	15
Anchusa	20	Heuchera sang	20
Anemone, St. Brig.15		Hibiscus	*15
Antirrhinum	20	Hollyhocks	5
Aquilegia	15	Hop, Japanese	15
Arctotis grandis	20	Hunnemannia	8
Asparagus	30	Hyacinth Bean	15
Asters	8	Impatiens Sultani	15
" perennial	15	Ipomeae	3
Baby's Breath	20	Iris	*50
Bachelor Button	*5	Jerusalem Cherry	*20
Balloon Vine	25	Job's Tears	*
Balsam	10	Kenilworth Ivy	5
Begonia	15	Kochia	15
Bellis perennis	5	Kudzu Vine	15
Boston Ivy	15	Lantana	15
Blanket Flower	20	Larkspur	15
Blue-eyed Daisy	20	Lathyrus	25
Blue Salvia	*15	Lavender	20
Brachycome	8	Lemon Verbena	8
Browallia	20	Linaria	5
Cactus	30	Linum	8
Calendula	10	Lobelia	8
California Poppy	8	Love-in-a-mist	8
Campanula	8	Lychnis	20
Canary Bird Vine.*		Mallow Marvel	*15
Candytuft	5	Marigold	5
Cannas	*15	Marvel of Peru	5
Canterbury Bells	*15	" mum	*5
Cardinal Climber.....	5	Mesembryanth-	
Carnations	8	" mum	*5
Caster Beans	15	Mimosa	8
Centaurea	*5	Minulus	8
Chrysanthemum	5	Mina lobata	5
Cigar Plant	*8	Mirabilis	5
Cineraria	5	Monkey Flower	20
Cleome pungens	20	Moon Vine	20
Cobaea scandens	15	Morning Glory	20
Cockscomb	20	Mourning Bride	20
Coix	*	Musk Plant	20
Coleus	20	Nasturtium	8
Columbine	15	Nicotiana	20
Coreopsis	20	Nigella	8
Cosmos	5	Oenothera	5
Crimson Flax	8	Oxalis	20
Cuphea	*8	Palm	15
Cypress Vine	5	Painted Tongue	5
Dahlia	5	Pansy	8
Datura	15	Passion Flower	50
Delphinium	15	Peas, Sweet	15
Dianthus	5	Pelargonium	20
Digitalis	20	Penstemons	*20
Dimorphoteca	15	"	*15
Dolichos	15	Scabiosa	20
Dusty Miller	*5	Scarlet Runner	8
Eschscholtzia	5	Scarlet Sage	*15
Bush	8	Schizanthus	20
Euphorbia	20	Sensitive Plant	20
Evening Primrose	5	Shasta Daisy	20
Feverfew	20	Smilax	15
Fire-on-the-Mt	20	Snapdragon	20
Forget-me-not	15	Solanum	*20
Four O'Clocks	5	Spider Plant	20
Foxglove	20	Stocks	5
Fuchsia	*30	Stokesia	*
Gaillardia	20	Swan River Daisy	8
Geranium	20	Sweet Peas	15

(Continued on Page 36)

ESCHSCHOTLZIA - EUPHORBIA

Erysimum Continued from Page 35.

— elatum . Orange-yellow; 12-18"; April-June; HB.....	ERYS-8. 25¢
— linifolium . Low clumps; lilac fls; 1 ft; HP.....	ERYS-13. 20¢
— murale . Golden yellow fls in racemes; HB but grow as HA; 20".....	ERYS-14. 25¢
— Perofskianum . Blister Cress. Orange-yellow fls; HA.....	ERYS-20. 20¢
— puchellum . A wee yellow Wallflower; 3"; HP.....	ERYS-22. 25¢
— Wittmanii	ERYS-30. 25¢
— Erysimum Blend . Mixture of all the above.....	ERYS-X. 20¢

ERYTHRINA. (ehr-ith-RYE-nuh) CORAL TREE. Leguminosae.

Trees and shrubs grown in the South, with showy red and reddish or yellowish flowers followed by long pods. The herbaceous kinds are grown under glass.

— Corallodendron . Tree to 20 ft; pretty scarlet fls; from Columbia.....	ERTH-4. 25¢
— herbacea v. arborea . Sh or tr with short racemes; scarlet fls.....	ERTH-10A. 25¢
— indica . Tall tree with dense short racemes of scarlet fls.....	ERTH-11. 25¢
— Erythrina Blend . All the above.....	ERTH-X. 20¢

ESCHSCHOTLZIA. (esh-SHOLT-see-uh) Papaveraceae.

Western North American natives with showy yellow flowers. Grown as annuals for their showy display. Plant early in the spring.

E. californica: California Poppy. Sow seeds where plants are to grow, early in the spring or in the South, they should be sown in the fall. They are especially showy in mass plantings and grow well in most any soil, giving a long period of bloom.

Single Flowered Varieties: Very showy in mass plantings.

— aurantiaca . Deep orange.....	ESCH-1A. 15¢
— Carmine King . Best carmine variety.....	ESCH-1C. 15¢
— Dainty King . Pretty, dainty soft pink.....	ESCH-1D. 15¢
— Dazzler . Erect, compact, fiery scarlet.....	ESCH-1L. 15¢
— Golden West . Bright yellow with orange center.....	ESCH-1G. 15¢
— Mandarin . Inside petals orange, outside scarlet.....	ESCH-1M. 15¢
— Mikado . Attractive orange-crimson.....	ESCH-1K. 15¢
— Orange Flame . Vivid orange-scarlet, showy in masses.....	ESCH-1F. 15¢
— Orange King . Showy orange.....	ESCH-1R. 15¢
— Rose Cardinal . Pretty carmine-pink.....	ESCH-1N. 15¢
— Scarlet Beauty . One of the best scarlets.....	ESCH-1S. 15¢
— Tango . Bronzy red and terre cotta.....	ESCH-1T. 15¢
— The Geisha . Brilliant gold and crimson, showy.....	ESCH-1H. 15¢
— Vesuvius . Showy Wallflower-red.....	ESCH-1V. 15¢
— White Emperor . The best white.....	ESCH-1W. 15¢
— Ramona Hybrids . Compact, fringed strain in many colors.....	ESCH-1RX. 15¢
— Single Eschscholtzia Blend . Blend of above.....	ESCH-1X. 15¢
— Monarch Art Shades . Finest blend of double flowers.....	ESCH-2X. 10¢

EUPATORIUM. (yew-pah-JOH-ree-um) THOROUGHWORT. BONSET. Compositae.

A large genus with ornamental plants for the greenhouse, border and wild garden. They are all easily grown from seed.

— cannabinum . Snow-on-the-Mt. Pale purple heads; 6"; HA.....	EUPT-9. 20¢
— Lasseauxii . Heads white changing to rose; 2 ft; TA.....	EUPT-20. 20¢
— maculatum . Joe-Pye Weed. Fl heads pink or purple; 8 ft; TA.....	EUPT-26. 15¢
— Eupatorium Mixture . All kinds.....	EUPT-X. 15¢

EUPHORBIA. (eu-FAUR-be-ah) SPURGE. Euphorbiaceae.

A large genus consisting of many different types of plants and having a milky juice. They thrive in a porous and not too rich a soil.

— heterophylla . Like Poinsettia; start indoors; 3 ft; TA.....	EUPH-67. 15¢
— marginata . Snow-on-the-Mt. Green lvs with white margins; 2 ft; HA.....	EUPH-82. 15¢
— Myrsinites . Decumbent RG; stems end in golden flower head; HP.....	EUPH-90. 20¢
— polychroma : see <i>E. epithymoides</i> . (Seed only after new crop in June).	
— epithymoides . Showy in border; 20"; HP (Seed in June).....	EUPH-40. 25¢
— Euphorbia Mixture . All kinds in stock.....	EUPH-X. 15¢

FELICIA. (fe-LISH-e-ah) Compositae.

African plants and subshrubs. The latter are greenhouse plants and the annuals make nice plants in the garden. They have attractive daisy-like flowers with blue or white rays and yellow disks.

— Bergeriana . Kingfisher Daisy. Bright blue star-shaped fls; RG; 12"; TA.....	FELC-4. 40¢
— hyssopifolia . Rays lavender-mauve, golden disk; 12"; TP.....	FELC-8. 30¢

FRANKLINIA: See *Gordonia alata*.

FRASERA. (fray-ZER-ah) COLUMBO. Gentianaceae.

North American plants with white, yellowish or bluish flowers in panicle clusters.

— Parryi . Greenish white fls; S. Calif.; 3 ft.....	FRAS-4. 20¢
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FREESIA. (FREE-zee-ah) Iridaceae.

A very popular flower for the greenhouse. Flowers in 10 weeks after planting bulbs and they make choice flowers in the late winter or early spring. They are grown outdoors in S. California where they should be planted in the fall. Seed will produce flowers in second or third year. Order the bulbs early in the year.

— Tubergeni Hybrids . Beautiful range of bright colors.....	FREE-6H. 50¢
— Luzi . New type in beautiful new shades and lge fls.....	FREE-2. 50¢

FREESIA CORMS: Offerings will follow in later issues.

FRITILLARIA. (frit-il-LAY-ree-ah) Liliaceae.

Bulbous plants with drooping bell-shaped flowers often checkered in greenish, purple or brown. They can be grown from the bulbs which are offered in the summer bulb lists or they can be grown from seed. They are easily grown in ordinary soil and flower early in the spring.

— acnifolia . Fls large, olive-green and purple; rare; 18"; HP.....	FRIT-2. 30¢
— cirrhosa . Yellowish fls checkered purple; 2 ft; HP.....	FRIT-8. 25¢
— imperialis . Purplish brick-red or yellow-red fls; to 4 ft; HP.....	FRIT-11. 25¢
— rubra . Extra red form; 3 ft; HP.....	FRIT-11R. 25¢
— meleagris . Fls checkered and veined with purplish or maroon; HP.....	FRIT-16. 25¢
— pallidiflora . Pale yellow fls spotted inside; 9"; HP.....	FRIT-20. 25¢
— pubica . Yellow Bell. Earliest spring fl; 6"; HP.....	FRIT-22. 25¢
— pyrenaica . Dark purple spotted with green; 18"; HP.....	FRIT-25. 25¢

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Germination Time

(Continued from Page 35.)

Sweet Sultan*	Viola*
Sweet William10	Violets*
Ten-week Stock5	Wallflower5
Umbrella Plant25	Wild Cucumber30
Verbena8	Yucca*
Vinca*	Zinnia5

The question of germination is our biggest headache. While it is impossible to make germination tests of the many thousand kinds of seeds we have in stock, never the less, tests are always going on and we always have a good idea as to the condition of all seeds.

On the other hand, so many failures to get germination, is due to wrong care. While the list here given states so many days, the age and storage of a lot of seed will vary these periods; the wrong time and place of germination may even make an entire failure; the proper handling of the seed, such as Cannas, Sweet Peas, etc., may affect the germination; in many cases the medium in which the seed is planted will cause a failure, such as in *Franklinia*, *Vassinium*, etc where an acid condition is necessary; but most of all, is the matter of covering, temperature, moisture, etc., these cause most if the failures.

One of the advantages of *SAILER'S GARDEN MAGAZINE* over the old type seed catalog is in providing sufficient space to the solution of all the many problems that come up in growing flowers. We especially want our readers to discuss these matters in detail so that more pleasure may be had in growing flowers.

We want to mention here the matter of listing prices with some articles. This has not been the practice in the past, but for a long time the writer has disliked reading glowing descriptions of a flower when there is no source from which the seed of the plant could be secured. Some time ago there was an article in one of the national flower magazines on a rare species, or maybe it was a variety, and as I had never heard of this particular flower, I wrote for more information, especially as to the source for stock. The answer indicated that the article was written from some old source and there was no possible source. The important point to all articles on flowers, is where can I get it?

EUCALYPTUS BICOSTATA.

Sow in either a light sandy soil in a seed box or pot or sow in light sandy material covered with about ¼ inch of ground peat moss. The seed should be covered only very lightly and kept moist after sowing. Care should be taken not to water too heavily as this may cause damping off.

Germination should take place at ordinary room temperature in from one to three weeks. By the time the second pair of leaves is well formed, the plants, if sown in a box, should be "pricked off" into a pot of standard potting soil.

The seed sent is mixed with a considerable amount of chaff (infertile seed) which need not be separated, and the two can be sown together. The black seed is fertile.

Australian Information Bureau, New York.

THANKS C. W. WOOD.

We thank C. W. Wood for mentioning your catalog. We found just what we wanted in it.

Mrs. Orville E. Saxe, Palenville, N. Y.

A rainy season is followed the next season by a heavy vegetative growth. Soluble sugars in the tissues lower the freezing point thus making it more resistant to frost.

GAILLARDIA GERANIUM GEUM

FRITILLARIAS continued from page 36.

- recurva**. Scarlet checkered with yellow; 2 ft; HP..... **FRIT-26.** 25¢
- Roylei**. Greenish yellow fls netted dull purple; 2 ft; HP..... **FRIT-28.** 25¢
- verticillata**. White or yellow fls dotted at base; 18"; HP..... **FRIT-33.** 25¢
- Fritillaria Blend**. Mixture of above..... **FRIT-X.** 25¢

FUCHSIA. (FEW-shuh) Onagraceae.

They are tender plants grown in the cool greenhouse in the North. They can be bedded out during the summer and in mild climates grown outdoors. They are excellent house plants, very pretty and popular.

- California Strain**. Crosses from A. F. Society, A and B rated varieties..... **FUCH-1.** 50¢

GAILLARDIA (gay-LAHR-de-ah) **BLANKET FLOWER.** Compositae.

Annuals, biennials and perennials with showy solitary heads and yellow or red rays. They make very good cutflowers as well as display in the border. Easily grown, doing best in a light open well drained soil. The annuals can be either started indoors or sown in the open ground in April. Most of the common garden varieties belong to the species *aristata*.

- G. ARISTRATA:** Hardy perennial, easily grown anywhere; comes in many var.
- Bremen**. Coppery scarlet with yellow tips; pretty..... **GAIL-1B.** 15¢
- GianHi bydrids**. Large flowered strain in many colors..... **GAIL-1H.** 15¢
- Goblin**. A dwarf compact variety; deep red with golden border..... **GAIL-1G.** 15¢
- Kobold**. A Swiss novelty with red fls and gold zoning..... **GAIL-1K.** 15¢
- Monarch Strain**. Very large flowers in a wide color range..... **GAIL-1M.** 15¢
- Lorenziana**. Ray and disk flowers..... **GAIL-1L.** 15¢
- Portola Hybrids**. Scarlet intensified with bronze-gold tips; semi-double..... **GAIL-1P.** 15¢
- Yellow Queen**. Pure golden yellow, very pretty..... **GAIL-1Y.** 15¢
- Tangerine**. Beautiful orange color, true..... **GAIL-1T.** 15¢
- The Dazzler**. Intense golden yellow with maroon-red zone..... **GAIL-1D.** 15¢
- Blend of the Above Varieties**..... **GAIL-1X.** 15¢
- G. PULCHELLA:** Also listed as *G. picta* and *G. Drummondii*. Hardy annuals growing to 1½ feet. They come in several varieties and are grown mainly for cutflowers.
- Indian Chief**. Pretty deep coppery scarlet with dark brown center..... **GAIL-7C.** 15¢
- Double Yellow**. Pure golden yellow..... **GAIL-7Y.** 15¢
- Single Mixed**. A choice blend of varieties..... **GAIL-7X.** 10¢
- New Giant Double Hybrids**. A high class mixture..... **GAIL-7DX.** 15¢

GALEGA (gah-LEE-gah) Leguminosae.

Bushy perennials with white, blue or purple pea-like flowers in thick clusters or racemes; excellent cutflowers. Seed can be sown where plants are to grow.

- officinalis**. Goat's Rue. White, lilac and rose fls; 3 ft; HP..... **GALG-2.** 15¢
- persica**. Pure white for back of the border; 3 ft; HP..... **GALG-5.** 15¢

GAMOLEPSIS (gam-MOL-ep-is) Compositae.

Small shrubs or plants from S. Africa having yellow solitary flower heads of ray and disk flowers. Grown for the flowers or edging; tender.

- tagetes**. Bright yellow; 1 inch across; early fl'ing; dwarf; 12"; TA **GAMO-1.** 20¢

GAULTHERIA. (gawi-THÉE-re-ah) Ericaceae.

Evergreen woody plants of the Heath Family having rather small white, blue, red or black flowers followed by fruits. Many are very dwarf and suited for the rock garden. Sandy soil, plenty of moisture, best in light shade and acid soil; not real hardy in the North without winter protection.

- Hookeri**. Rare species from the Himalayas..... **GAUL-6.** 50¢
- Miqueliana**. White or pinkish nodding flowers; 12"; RG..... **GAUL-10.** 30¢
- trichophylla**. Solitary pink flowers; prostrate; RG..... **GAUL-21.** 30¢
- Gaultheria Blend**. Mixture of available species..... **GAUL-X.** 25¢

GAURA. (GAU-rah) Oragraceae.

North American perennials; rose or white flowers in spikes or clusters. Grown in the border or wild garden.

- Lindheimeri**. White with rosy cups; grow as hardy annual; 4 ft; TP.... **GAUR-2.** 15¢

GAZANIA. (gah-ZAY-ne-ah) (Meridiana) Compositae.

Grown in the flower garden and for edging. Flowers in white, yellow, orange and opening in the sunshine, disks dark.

- longiscarpa**. Heads 2" ac; rays orange with dark spot at base; TA*..... **GAZ-1.** 30¢
- splendens, Mixed**. Rays orange with black and white spot at base; 18"..... **GAZ-8.** 20¢

GERANIUM (ge-RAN-ne-um) **CRANESBILL.** Geraniaceae.

Annuals and perennials grown in the border or rock garden. Set the plants of the perennials species, out in the spring. They are easily grown. The greenhouse Geraniums are listed as *Pelargonium*.

- collinum**. Purplish violet fls; 1½ ft; HP..... **GERN-11.** 25¢
- nepalense**. Rose-purple fls; decumbent to 18"; HP..... **GERN-30.** 20¢
- psilostemon**. (*G. armenum*) Dark red, spotted black at base; 24"; HP.... **GERN-39.** 25¢
- sanguineum**. Reddish purple fls; 18"; HP..... **GERN-46.** 15¢
- prostratum v. lancastriense**. Dwarf; dark pink fls; 6"; HP..... **GERN-46L.** 25¢
- Geranium Blend**. All the available species mixed..... **GERN-X.** 25¢

GERARDIA (ger-AR-de-ah) (Agalinis) Scrophulariaceae.

Annual and perennial plants with rather showy red or yellow trumpets. Sow seed by a rotted log in light shade. Not easy to establish.

- virginica**. (*Aureolaria*) Nice yellow; June-Aug; 4 ft; HP..... **GERA-3.** 25¢

GEUM (GEE-um) Avens. Rosaceae.

Erect perennial plants, easily grown and excellent for cutting or for beds, border or rock garden. Sow the seeds in open ground early in the spring.

- Borisii**. Hybrid with bright yellow flowers; 6"; HP..... **GEUM-3.** 25¢
- chiloense v. Firegall**. Bright scarlet flowers; 24"; HP..... **GEUM-10F.** 15¢
- Gold Ball**. Rich golden yellow flowers; 24"; HP..... **GEUM-10G.** 15¢
- Mrs. Bradshaw**. Rich double scarlet flowers; 24"; HP..... **GEUM-10B.** 15¢
- Lady Stratheden**. Double golden yellow flowers; 24"; HP..... **GEUM-10S.** 15¢

GEUM Continued on Page 41.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

RADISH REPELS SQUASH BUGS.

This year when you plant your Squash, try planting some Radish near them. Many of our readers claim fine results in doing this and as the squash bugs are a very troublesome insect, this is well worth trying.

PRIMULA Berrywell.

Primula Berrywell is a hybrid raised by a friend of ours at her home "Berrywell" in Berwickshire. It is a bulleyana hybrid, but I am not certain of the other parent.

The flower is a lovely deep apricot-orange on a stout stem and of the Candelabra section.

By Helen M. Logan Home.

SUBSCRIPTION PRICE: \$2.00 per year

Squash Varieties

We list the following Squash varieties all packages are 10¢ each or 20¢ per ounce or 4 ounces for 70¢ postpaid.

WINTER TYPE SQUASHES:

BLUE BANANA. A long Squash that is an excellent quality variety.

BOSTON MORROW. This excellent var-celent variety is also used by the canners for pumpkin, it is very good.

BUTTERNUT. A very popular variety with a Squash flavor all its own.

BBUTTERCUP. A small Squash much like Butternut and mush later; its good.

GOLDEN DELIOUS. One of the best winter Squash.

BLUE HUBBARD. One for the longest keepers and of high flavor.

CHICAGO WARTED HUBBARD. An old variety that has never been replaced.

GOLDEN HUBBARD. Has the same high qualities of other Hubbards.

MARBLEHEAD. This variety and strain is resistant to curly top disease. It is a fine market variety too.

TABLE QUEEN. (Acorn) If you have never grown this you have missed something. It is a small acorn-shaped fruit and is cooked much as Sweet Potatoes are; it is tops.

GOLDEN TABLE QUEEN. The same only in a golden color.

MAMMOTH TABLE QUEEN. A larger strain but of the same quality.

SUMMER TYPE SQUASHES:

GREEN BUSH COCOZELLE. Use when about 6-8 inches long; it is very good.

CONN. STRAIGHTNECK. A more popular variety than Crookneck with market gardeners for packing; high quality.

EARLY SUMMER CROOKNECK. A very popular home garden variety; very early.

SQUAGHETTI. A recent introduced Summer Squash.

VEGETABLE MARROW BUSH. This can be grown in the small garden being a bush type Squash; a fine marrow type.

WHITE BUSH SCALLOP. The early type for summer Squash; use when young.

BENNING'S GREEN TINTED SCALLOP. Make an excellent show in the market.

BLACK ZUCCHINI. Best when fruits are about 4-5 inches long.

COLLECTION OFFER: We will send a package of each of the above varieties with an ounce of Radish seed included for \$1.00.

Send all orders to:
PIONEER SEED COMPANY
Dimondale, Michigan.

GILIA GLOBULARIA GODETIA

GILIA (JIL-ee-ah) Polemoniaceae.

Annual, biennial and perennial plants with blue, yellow, pink or white funnellform flowers. They are mostly annuals and the seed can be planted early in open ground.

- achilleaeifolia*. Blue fls in dense terminal clusters; 2 ft; HA..... GIL-2. 15¢
- aggregata*. Scarlet fls; 2½ ft; HB or HP..... GIL-4. 30¢
- capitata*. Light blue fls in heads 1" across; 2ft; HA..... GIL-12. 15¢
- White*. A white variety of the above..... GIL-12W. 15¢
- caruolia*. HA..... GIL-13. 15¢
- dianthoides*. Ground Pink. Exquisite pink fls 1"; 6 in. tall; HHA..... GIL-18. 20¢
- lutea*. (G. micrantha) Erect; yellow, white or rose fls; 6"; HHA..... GIL-26. 15¢
- rubra*. Standing Cypress. Scarlet fls with markings; 6 ft; TB or TP..... GIL-38. 15¢
- tricolor*. Fls with lilac lobes, yellowish tube and purple th; 18 in; HA..... GIL-42. 15¢
- Gilia Mixture*. All available kinds mixed..... GIL-X. 15¢

GLADIOLUS (glad-ee-OH-lus) Iridaceae.

Cormous plants native of S. Africa. Most of them must be dug up in the fall and stored in a frost proof place over winter. There are some species that are hardy in Michigan. The common garden Gladiolus are grown from corms as a rule.

- blaudus*. White and red tinged fls; 2 ft..... GLAD-5. 25¢
- illyricus*. Reddish fls; 18"..... GLAD-29. 25¢
- primulinus*. Various colors; 18"..... GLAD-42. 15¢
- psittacinus*. Bright red fls; 3 ft..... GLAD-44. 25¢
- Gladiolus Mixture*. All available kinds mixed..... GLAD-X. 15¢

GLOBULARIA (glob-u-LAY-re-ah) Globulariaceae.

Little shrubby plants from the mountains of S. Europe and Asia with blue or white flowers in rounded heads. They are easily grown from seed, in a moist and partly shaded place and also suitable for the rock garden.

- nervigica*. Species from Austria..... GLOB-6. 25¢
- trichosantha*. Globe Daisy. Fluffy blue flower heads; 8"; HP..... GLOB-9. 20¢

GLAUCIUM (GLAW-se-um) HORNED or SEA POPPY. Papaveraceae.

Glaucous plants with orange colored juice and with large solitary orange or yellow flowers. They are grown as annuals, thriving in any soil in a sunny location.

- Mixed*. Scarlet and yellow; 2 ft; HP grow as an annual..... GLAU-X. 15¢

GODETIA, (go-DEE-she-ah) Onagraceae.

Erect annuals with bright showy flowers in red, lilac, purple or white. They are easily grown, best in a light soil and sunny exposure. Seeds can be started indoors or planted where the plants are to grow.

G. GRANDIFLORA: This species is the commonly grown Godetia. It comes in many choice varieties both double and single flowers. They all are hardy annuals.

- Charming*. Dwarf; very bright deep satiny pink; 12 inch tall..... GOD-4C. 15¢
- Crimson Glow*. Dwarf; extra dark crimson strain; 12"..... GOD-4G. 15¢
- Duke of York*. Dwarf carmine-scarlet; 12"..... GOD-4D. 15¢
- Kelvedon Glory*. Dwarf; deep glowing salmon-orange; 12"..... GOD-4K. 15¢
- Mauve Queen*. Beautiful new mauve color; dwarf; 12"..... GOD-4M. 15¢
- Purity*. Glistening solid snow-white; 12"..... GOD-4P. 15¢
- Rosemunde*. Beautiful rose-pink; 12"..... GOD-4R. 15¢
- Sybil Sherwood*. Pretty salmon-pink; 12"..... GOD-4S. 15¢
- Thunderbolt*. Vivid deep crimson with frilled petals; 12"..... GOD-4T. 15¢
- White Swan*. Large flowering satiny white; 12"..... GOD-4W. 15¢
- Dwarf Single Mixed*. Above varieties mixed..... Oz. 50¢..... GOD-4X. 10¢

DOUBLE DWARF VARIETIES:

- Sweetheart*. Azaleiflora; bright shell pink; 12"..... GOD-5H. 15¢
- Sybil Sherwood*. Double flowered; pretty salmon-pink; 12"..... GOD-5S. 15¢

TALL UPRIGHT SINGLE VARIETIES: These are nice for border, bedding; 2-3 ft tall.

- Duke of York*. A rich scarlet..... GOD-6D. 15¢
- Fairy Queen*. White and crimson..... GOD-6F. 15¢
- Gloriosa*. (Lord Roberts) Blood-red..... GOD-6G. 15¢
- Pelargonium*. Bluish pink, blotched carmine..... GOD-6P. 15¢
- Scarlet Queen*. Brilliant scarlet..... GOD-6S. 15¢
- The Bride*. Crimson and white..... GOD-6B. 15¢
- Tall Upright Single Mixed*..... GOD-6X. 15¢

WHITNEYI: Very compact strain, dwarf and double, also known as Azaleaeiflora.

- Begonia Rose*. Compact, brilliant rose..... GOD-7B. 15¢
- Lady Albemarle*. Compact, crimson..... GOD-7L. 15¢
- Whitney Blend*. All compact double varieties..... GOD-7X. 15¢

GORDONIA. (gor-DOH-nee-ah) Theaceae.

Trees and shrubs from warm regions. The American species (G. alata) known as the Franklinia tree, is rare and not many are known. It requires an acid soil and is hardy up to Mass. We wish reports on them along the northern planting area as we would like to map this line in a future issue.

- atalamaha*. FRANKLINIA TREE. To 20 ft; fls 3" ac..... GODO-1. Seeds 5¢ each

GOMPHRENA. (gom-FREE-nah) Amaranthaceae.

Useful for bedding and cutflowers as well as for dried or everlasting flowers. All HA

G. GLOBOSA: Start seeds indoors for better germination; flowers are clover-like.

- Rose*..... GOMP-2Z. 15¢
- Striped*..... GOMP-2S. 15¢
- Orange-yellow*..... GOMP-2Y. 15¢
- White*..... GOMP-2W. 15¢
- Purple*..... GOMP-2P. 15¢
- Piccole*. A dwarf form with wine-red flowers..... GOMP-2C. 15¢
- Mixed*. Above varieties mixed..... GOMP-2X. 10¢

GOURDS.

Under this heading are listed the cucubits that have hard shells and grown for ornamental. They may be divided into large small fruited varieties. They are very ornamental, are easily grown from seed planted outdoors as soon as the soil is warm. If started indoors, grow them in pots as they resent root disturbance. They will stand no frost. See articles during the fall months as to harvesting, etc.

Continued on Page 39.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Gnome Marigold

Gnome belongs to the *signata pumila* Marigolds. It is a single flowering type,



low bushy and ideal for beds or borders.

This new variety is only ten inches high and a beautiful golden yellow and to date is the best variety in this class.

It could be started early but seed planted now will give good flowering plants for summer bloom. Space the plants 10-12 inches apart for best showing.

ORRIS ROOT

The sources of Orris root as collected in Italy comes from the *Iris*, *I. germanica*, *I. pallida* and *I. florentine*.

When freshly dug, the roots have no particular odor but after peeling and drying they develop the scent of Violets. When the dry roots are powdered they find many uses in perfumery on account of its Violet scent.

This year, instead of throwing away those surplus *Iris* roots, peel them, dry and powder the roots. We would like to hear of your experience.

INFORMATION WANTED ON GROWING FLOWERS IN SAUDI ARABIA

Mrs. Mary C. Heyser of Kansas City, Mo. writes for information on flowers for her son who is stationed in Saudi Arabia and wishes to build some solariums; he has 3 acid carboys which he will use.

Personally, we are at a loss as to what to advise Mrs. Heyser, possibly some of our readers has the information. We will be glad to hear from them.

MECONOPSIS.

Only *Meconopsis cambrica*, the Welch Poppy, is readily grown in the central states, but the Himalayan species do well in the Pacific northwest. Little trouble will be had in germination, but the seedlings must be given partial shade and their roots must constantly be in a moderately moist soil that is high in organic matter. All plants suffer appreciably when the atmosphere is too dry and conversely thrive in high humidities. There is no critical time of the year for starting the seed.

GERMINATING ILEX or HOLLY SEED.

It is best propagated by seed planted in the fall or stratified until spring. It sometimes takes 2-3 years to germinate. Neither boiling water nor the acid treatment has been found to overcome dormancy so that one should plan at the start to make his seed bed to stand 2-3 years.

Mulch the seed bed over winter but remove promptly in the spring. Do not use fertilizer on *Ilex*, oak leaf mold is the key to success. Mulch with it, too. The various species vary some in their germination treatment. And remember, too, that *Ilex* is a lime hater.

SEEDS WANTED:

We would like to hear from anyone having *Rhoes discolor* or *Moses in the Cradle*.

SUBSCRIPTION PRICE: \$2.00 per year

Tall African Marigold

It is the tall Africans that are the most popular of the Marigolds. While there are other type blooms in them, the large globular-headed type is most showy in the border.



They grow three feet high and this strain is exceptionally double either in a rich lemon or a deep orange. Both colors are very showy.

A mass planting of them in the flower border or in front of a shrubby planting, is showy at considerable distance.

This type, unlike the French Marigolds, requires a rich soil and can be started indoors

and transplanted. They do not resent moving when the plants are small, as do the French type,

Grow them where they can get full benefit of the sun.

Pkt. either color or mixed, 10¢; 1/4 Oz. 45¢

Hemerocallis from Seed

(By Elvin McDonald)

Hybrid Hemerocallis seeds offer no end to variation of color or bloom and growth habits, altho many from each lot will not be satisfactory plants, several will and they will justify your time and effort in growing them.

Plant the seed at any time during the growing season, preferably in June, July and August. Plant in a frame of well drained soil, which has been well worked before planting. Make little drills one half inch deep and you are ready to sow the seeds. Space them about a half inch apart. Cover with half inch of soil and water well. If the bed is kept moist, green tips should begin to appear in about 10 days. They will grow fast and the fans of leaves will get bigger; some times there will be more crowns of leaves start by fall. In October transplant to their permanent bed, preferably about 8" apart each way. When they bloom take notes on which are worth keeping and mark them. I like to leave them for at least another year's bloom before I discard any or put any into their final place in the border for often their first blooms do not do justice to what the plant may really produce. You must not let yourself keep all of them, bad and good, for you will soon find yourself in a sea of inferior plants.

Let me mention here that the named varieties of Hemerocallis that we have in our gardens will not come true from seeds and the seedlings will tend to revert back to their parent.

NOTE: Any reader who finds he has developed a variety that is extra good, we will be pleased to assist in putting it on the market. Without some way to get the information to interested growers, a lone grower has very little chance of disposing of the stock. All we ask is that we have a plant for our trials and after blooming, if good enough, we will do all we can to make it known. Editor.

HIBISCUS CANNABINUS.

Mr D. A. Briggs of California wishes information on this plant, especially cultural directions, season of planting and its commercial value as well as where it can be sold.

If any of our readers have this information, we would be pleased to have them write.

GYPSOPHILA - HEMEROCALLIS

—GOURDS continued from page 38.

SMALL FRUITED VARIETIES: Mainly Cucurbita pepo.

—Egg, White. About the size of a lemon.....	GORD-1E. 15¢
—Flat Striped. Dark green with yellow stripes.....	GORD-1F. 15¢
—Miniature. Fruits round, dark green and striped yellow.....	GORD-1M. 15¢
—Orange. Orange color and shape.....	GORD-1R. 15¢
—Pear-bicolor. Half green, half yellow; pear-shaped.....	GORD-1B. 15¢
—Pear. White fruits; pear-shape.....	GORD-1P. 15¢
—Pear Striped. Dark green striped with longitudinal white bands.....	GORD-1L. 15¢
—Spoon.....	GORD-1S. 15¢
—verrucosa. Small green, very warty fruits.....	GORD-1V. 15¢
—Small Fruited Varieties Mixed.....	GORD-1X. 10¢

LARGE FRUITED VARIETIES: Mostly Cucurbita leucantha.

—Apple Shaped. Green.....	GORD-2A. 15¢
—Bottle Shaped. Green.....	GORD-2B. 15¢
—Dipper.....	GORD-2D. 15¢
—Hercules Club.....	GORD-2H. 15¢
—Nest Egg.....	GORD-2N. 15¢
—Orange.....	GORD-2G. 15¢
—Pear.....	GORD-2P. 15¢
—Turk's Cap.....	GORD-2X. 10¢
Oz. 25¢; 1/4 lb. 90¢	

GRINDELIA. (grin-DEE-le-ah) **GUM PLANT.** Compositae.

Western U. S. perennials bearing large yellow ray or disk flowers and doing well on poor soils.

—squamulosa. Yellow fls 3/4" across; 2 ft; HB or HP..... GRIN-10. 15¢

GYPSOPHILA. (gip-SOFF-il-ah) **BABY'S BREATH.** Caryophyllaceae.

Hardy annuals and perennials of great value both as cutflowers and plants in the rock garden or border. The flowers are small and numerous, in yellow, white or rose. G. paniculata is also grown for its dried flowers which are used in bouquets, etc.

G. ELEGANS: Hardy annuals grown mainly for cutflowers; they are very valuable for this purpose. Succession planting can be made every week during the spring months. In the South they should be planted in the fall; blooms in 6-8 weeks from planting; 2 ft.

—Carmine.....	GYP-5C. 10¢
—Crimson.....	GYP-5S. 10¢
—Rose.....	GYP-5Z. 10¢
—Blend of the Above Colors.....	Oz. 40¢ Lb. \$2.00 GYP-5X. 10¢

GYPSOPHILA SPECIES:

—cerastioides. Mouse-ear G. Downy, cr, 3"; fls white; RG, HP.....	GYP-3. 20¢
—Manginii. Mongolian G. Rosy white fls in small panicles; HP.....	GYP-12. 25¢
—muralis. Rose fls; dwarf, good RG; HA.....	GYP-13. 20¢
—Oldhamiana. Bright flesh pink fls; mid-summer to frost; 3'; HP.....	GYP-15. 15¢
—pacific. Pale rose or purple fls; 3'; Siberia; HP.....	GYP-16. 20¢
—paniculata. Baby's Breath. Comes in several varieties and makes an airy display in the border with its mass of small white flowers; very popular; makes fine dried flowers.	
—Snowstorm. Grows 3' and in nice formed plants.....	GYP-18TS. 15¢
—Single White. Used mainly by market growers; Oz. 25¢ Lb. \$4.25.....	GYP-18. 15¢
—repens. Pink. Trailer to 6'; blooms early; HP.....	GYP-21P. 15¢
—White. The white flowered form.....	GYP-21W. 15¢

HEDYCHUM. (hee-DIK-e-um) **GINGER LILY.** Zingiberaceae.

Robust tropical perennial plants mostly from India. Grown in the GH or in the far South. Flowers are showy and fragrant; rich soil and plenty of moisture.

—coccineum v. augustifolium. Shorter lvs; salmon-pink fls 6'; TP.....	HEDY-4A. 25¢
—coronarium. Garland fl; white; 6', very fragrant; TP.....	HEDY-5. 25¢
—densiflorum. White fragrant fls; 6'; TP.....	HEDY-6. 25¢
—gracile. Greenish white fls; 2 ft; TP.....	HEDY-13. 25¢
—spicatum. Yellow fls; 3 ft; TP.....	HEDY-16. 25¢
—thyrsiforme. White fls in dense spikes; 6 ft; TP.....	HEDY-18. 25¢
—Hedychium Blend. All kinds mixed.....	HEDY-X. 20¢

HELENIUM. (he-LEE-ne-um) Compositae.

Mostly perennial plants; some annual, flowering in the summer and fall. Thrive in fairly rich soil and a sunny position; makes a fine plant in the border or wild garden. Easily grown from seed started early or to late July.

—autumnale. Heads 2" ac; lemon-yellow disk yellow; 6'; HP.....	HELE-2. 15¢
—Hoopesii. Fls 3" ac; 3 ft; HP.....	HELE-6. 20¢
—Helenium Blend. All kinds in stock.....	HELE-X. 15¢

HELIOPSIS. (hee-le-OP-sis) Compositae.

Hardy perennials with sunflower-like flowers 2 inches across and growing to 5 ft tall. They are nice in the border and make good cutflowers. Grow them the same as Sunflowers and seed started as late as July will bloom the following year.

—helianthoides. Numerous yellow heads 2 1/2" ac; 5 ft; HP.....	HELO-1. 15¢
—scabra major. Golden yellow fls; 5 ft; HP.....	HELO-4. 15¢

HEMEROCALLIS. (hem-er-oh-KAL-is) **DAY LILY.** Liliaceae.

A genus of mostly tuberous-rooted perennials with lily-like flowers and narrow grass-like leaves. They are all of simple culture, either grown from seeds which produce seedlings or from roots for particular varieties. The commonly grown garden forms are hybrids of various species. See special list for roots of named varieties.

—Peerless Blend. Seed saved from the best varieties.....	HEME-H. 20¢
—Hybrids. From hand pollinated flowers including pink and "reds".....	HEME-14B. 20¢
—Part hand and part bee pollinated including pink and "reds".....	HEME-14M. 15¢

HERACLEUM. (her-ah-KLEE-um) Umbelliferae.

Herbaceous perennials used for bold effect in large border. They bear enormous umbels of minute white or pink tinted flowers; thrive in rich soil.

—Mantegazzianum. Deeply cut white fls in umbels; 4 ft ac; 9 ft; HP..... HERA-2. 20¢

It is our intention to have these lists perfectly accurate and we welcome corrections

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

GIANT GERBERA HYBRIDS

Shipping Lilies



Four and five inch flowers on pencil stems two feet long, characterize this this new prize Gerbera strain.

It was developed for the Los Angeles market. It is approximately 35% reds, the balance being rare salmon, buff, pink and rose shades and including a clear yellow and a pure white of fine size.

A special private strain, very superior to the common Gerbera. Fresh picked seed is available during the season from late spring through late autumn. Fresh seed will give you a satisfactory stand of plants. Approximately 8,000 seeds per ounce.

Geberas are tender perennials and in the North are mainly grown in the greenhouse for their lovely flowers.

Seed can be started indoors, in a sunny window, planting them singly with the points of the seed just above the surface of the soil; keep them on the warm side while germinating. They also make fine pot plants.

Large Packet 30¢; 1/4 Ounce \$1.50

MISCELLANEOUS IRIS - SPECIES ETC

MISCELLANEOUS BEARDED IRIS.

Included under this classification are the hybrids between the two distinct races of Iris, that produce heavily veined and netted or marked petals; all are very good. They are winter hardy but should have some covering in the far North; give them a rather dry, sunny position.

ELMOHR. .90¢
Hardy reddish mulberry, heavy texture, DM, HM, AM; 36".

GRACE MOHR. .90¢
Sensational pale lilac veined and netted with manganese lilac, AM, HM; 34".

LADY MOHR. \$2.50.
Oyster shell white and frosted chartreuse yellow with red-violet blotch on falls, HM, AM, E-36".

MOHRSON. .50¢
Lacquered royal purple, HM, AM; M*-32".

ORMOHR. .50¢
Gray lavender with veins and dots of

violet throughout, HM, AM; M*-40".

MISCELLANEOUS IRIS.

(BEARDESS SPEC SPECIES)

The time of shipment varies in the following sorts. All are different.

DIOCHOTOMA. .50¢
(Vesper Iris) Mauve-lavender flowers opening in the evening and blooms in the hottest part of the summer; over a hundred blooms to the stalk.

KOCHIL. .35¢
A bearded species in red-purple; yellow beard, AM; E*-26".

PSEUDACORUS FLORA PLENO. .75¢
A rare double form of the beardless collected sort; rosette-like flowers in deep yellow.

REICHENBACHIL. .50¢
Tiny, light yellow self, bearded; E-4".

RUTHENICA. .50¢
(Pilgrim Iris) Rare dwarf, with rich deep blue flowers.

JULY DELPHINIUM CARE

Cut the spikes of all flowers off just above the foliage as soon as it fades. It is best to allow the plants to rest couple of weeks or so before stirring the soil around them or fertilizing them, but after a short rest a teaspoonful of a fertilizer such as ammonium phosphate can be worked into the soil, watering well at the same time. If this is attended to with care, a second crop of flowers can be had in the fall.

FLOWER SHOWS.

We will be pleased to publish notices of flower shows or public flower meetings if the information reaches us a good 40 days in advance.

SUBSCRIPTION price now \$2.00 per year.

TRIM THYME TWICE A YEAR.

Thyme bushes should be cut twice during the summer, first about the end of May or beginning of June and then again in late August.

If this is not done the plants will get leggy.

Thyme should always be planted in a well limed soil. It makes them more fragrant.

ISSUES TO BE INDEXED

About every three months there will be an index of the seeds mentioned in former issues which will include common names; you should have every issue; the cost is \$2.00.

Water Kabschias THROUGH their cushions.

This is the time of the year when Lily growers will be sending their prize blooms to the various flower shows and the remarks on the proper method for handling and shipping as given in a circular of the North American Lily Society will be of interest to every Lily grower. We quote:

Shipping exhibition Lilies requires careful as given a circular of the North American lilies are usually followed by experienced exhibitors.

(1) CUT the stalks of lilies either just before the lower flowers open or soon after. Cutting before flowers open is an advantage if they are to be kept in storage for several days or are to be shipped some distance.

(2) PLUNGE the freshly cut stems in deep water and allow the plants to harden in cool shade for 12 to 24 hours before packing. Storage in a refrigerator at 35-40 degrees F is best, but a cool basement is satisfactory.

(3) PACK in standard corrugated pasteboard cartons, lined with newspapers and wax paper, such as are used by commercial florists. Usually your local florist will furnish such cartons if asked for them in advance. Foliage and flowers should be dry when packed. Fasten stems to the box with loops of string tied thru holes in the carton and brace stems in such a way that they will be held in place. Protect open flowers by wrapping in paper. For shipment flowers must be snugly packed using shredded or crushed paper to fill spaces between flowers.

(4) MARK SHIPMENTS carefully, indicating nature of the contents, which side up, rush, perishable, etc. Get such labels from your local express office.

WARNING. Lilies or any other flowers should not be placed in a storage along with fruit or vegetables or that has been used for fruit or vegetables for several months previously. Gases are given off by ripening fruit which causes flowers to deteriorate rapidly.

The editor might add that care must be used with wet newspapers when packing flowers as it will heat causing considerable damage.

We are sorry not to have this issue out in time to give proper notice of the Society's show.

IRIS CULTURE SUGGESTIONS

Iris can be transplanted any time the soil is not frozen but the best time is from mid-summer to early September so that the roots can become established before the soil is frozen. If you set them out late in the season it will be best to draw soil up around them for protection; much of this will work off the roots in the spring.

The proper distance to set the Tall Bearded Iris is from 12 to 16 inches apart. Cover the rhizomes a little over an inch and enough so that the upper third is showing. Keep your roots watered till roots start; the old roots will dry up and they do not indicate any harm if they appear dried when you get your rhizomes.

Iris will not tolerate a wet place; a little fertilizer can be worked into the soil but avoid manure near the roots.

Cuttings rooted in a propagating bed should be potted when the roots are a quarter to a half inch long. Best results will be had at this time.

Some say peat moss is better than leaf mold for seed beds or potting.

HARDY HESPERIS - HOLLYHOCKS

This seed list continues from page to page and from issue to issue and runs alphabetically.

- GEUM** Continued from Page 37.
- coccineum**. Bright red flowers 1" across; HP..... **GEUM-11. 15¢**
 - elatum**. Golden yellow; 12"; best in light shade; HP..... **GEUM-13. 20¢**
 - montanum**. Golden yellow flowers 1½" across; 1 ft; HP..... **GEUM-24. 15¢**
 - urbanum**. Yellow flowers, ½" across; 2 ft; HP..... **GEUM-40. 20¢**
 - Yu (10,834)**. Newly collected from China..... **GEUM-42. 80¢**
 - Geum Mixture**. All available kinds mixed..... **GEUM-X. 15¢**

HESPERANTHA. (hes-per-AN-thah) Iridaceae.

Tender S. Af. bulbous plants very similar to Ixias; flowers star-shaped, opening in the evening, fragrant; they like sunny positions, sandy loam soil with some peat. Treat as a pot plant in the North.

- Bauri**. Bright rose-red fls in loose spikes; 2 ft; TBb..... **HSPR-1. 50¢**

HESPERIS. (HES-per-is) ROCKET Cruciferae.

Hardy biennials and perennials of erect branching habit and bearing white, rose or mauve-purple flowers in pyramidal spikes; excellent cutflowers; June-July; 1-3 ft. tall. They are fragrant. Sow seeds any time up to August for flowers the next season.

H.MATRONALIS: Sweet Rocket. The common garden forms are of this species. They are perennial but sometimes only biennial; hardy in the North; sow seed a year before they are to bloom.

- Mixed**. White and the red mixed..... **HESP-6X. 15¢**
- nana candidissima**. Dwarf form in pure white flowers..... **HESP-6C. 15¢**

HESPEROYUCCA. (hes-per-oh-YUK-ah) Liliaceae.

Only one species from S. Calif. much like the Yucca. Hardy only in mild climates.

- Whipplei**. Creamy white fls, 2" ac, fragrant, in nodding pan; TP..... **HSPR-1. 25¢**

HEUCHERA. (HEU-her-ah) ALUM-ROOT. Saxifragaceae.

Herbaceous perennials, usually of dwarf compact habit flowering in June-Sept, valuable in the low border or rockery. Grow in sunny place, good loamy soil, and producing mats of deep green leaves. The flowers are bell-shaped; excellent for cutting. germinate seeds warm and in light.

- cylindrica v. glabella**. Yellowish green fls; 2½ ft; HP..... **HEU-7G. 25¢**

H. SANGUINEA: Commonly grown species in gardens, founds on cliffs and hills.

- Spitfire**. Very pretty large rich scarlet fls..... **HEU-20S. 20¢**
- Hybrids**. Different colors and forms..... **HEU-20H. 20¢**

HIERACIUM. (hy-er-AY-shi-um) Compositae.

Perennial plants with red, orange or yellow flowers some of which are called Hawkweed. Easily grown. The leaves are in rosettes with the flowers in heads on erect spikes. The flowers should be cut off directly after flowering and the plants kept from spreading in the garden too much.

- faerouse**..... **HIER-6. 25¢**
- villosum**. Bright golden yellow; 2 ft; HP..... **HIER-19. 25¢**

HOLLYHOCKS. (Althaea rosea).

These are all perennials, excepting one or two forms which are treated as annuals. They do best in a rich soil, and in a warm position sheltered from strong winds. Seed can be sown any time up to August, so as to get a good start by fall when they flower the next year.

ANNUAL VARIETIES: Plant early in the spring when they will flower in July.

- Indian Chief**. Half double, deep amaranth-purple fls; 4 ft..... **HOLY-3C. 15¢**
- Indian Summer**. Double pink flowers; 4 ft..... **HOLY-3S. 15¢**
- Annual Mixed**..... **HOLY-3X. 15¢**

PERENNIAL VARIETIES:

- Allegheny, Mixed**. Semi-double fls, 5" ac, petals fringed..... **HOLY-2A. 15¢**
- Colorado Sunset**. NEW buff-apricot; pretty double type..... **HOLY-2C. 20¢**
- Empress Strain**. Enormous laced and curled fls in many colors..... **HOLY-2E. 15¢**
- Imperator**. Fringed fls in pink to cerise-salmon, 5 ft..... **HOLY-2M. 15¢**
- Triumph**. Double, waved and fringed fls; 3-4 ft..... **HOLY-2T. 15¢**

CHATER'S DOUBLE HOLLYHOCKS: These grow 6 feet tall and is the best strain of double Hollyhocks. The colors and blends are exceptionally nice.

- Carmine**..... **HOLY-4C. 15¢**
- Carmine Rose**..... **HOLY-4R. 15¢**
- Cream**..... **HOLY-4M. 15¢**
- Lavender**..... **HOLY-4V. 15¢**
- Lilic**..... **HOLY-4L. 15¢**
- Pink**..... **HOLY-4K. 15¢**
- Purple**..... **HOLY-4P. 15¢**
- Sulphur Yellow**..... **HOLY-4Y. 15¢**
- Violet**..... **HOLY-4T. 15¢**
- Chaters Mixed**. Made up in good color blend..... **HOLY-4X. 15¢**
- Hollyhock Mixture**. This is made up of all kinds. ¼ lb. \$2.50..... **HOLY-X. 10¢**

HYACINTHUS. (hy-a-CIN-thus) HYACINTH Liliaceae.

Bulbous plants of which the common garden Hyacinth is the best known. Some species formerly listed here belong to Galtonia and Muscari. For bulbs see the fall bulb listings. They are easily grown from seed. The large Hyacinth best from the bulb.

- amethystinus alba**. Nodding white fls; 6" tall; Spain; HP..... **HYAC-1. 20¢**
- ciliatus**. (H. azureus) Erect racemes; 6" tall; HP..... **HYAC-2. 25¢**

HYOSCYAMUS. (hy-oh-SY-ah-mus) HENBANE. Solanaceae.

Funnel-shaped flowers in spikes, best in poor soils. They should be used in large borders; some are grown for medicinal plants.

- niger**. Greenish yellow fls veined purplish; 2½ ft; HB or HA..... **HYOS-3. 20¢**

HYPERICOPHYLLUM.....

- compositarum**. Pretty S. Rhodesian; 3-4 ft; bright orange fls..... **HYPE-1. 25¢**

This seed list continues from page to page and from issue to issue and runs alphabetically.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

Freezing Mint

All the various Mints have been available for the table only during the growing season and thus, at least half of the year one simply went without this delicious flavor.

The deep-freeze has solved this problem for us and now we can enjoy the various Mints the year around. Here's how you do it.

Pick only the tenderest leaves early in the morning, using only the freshest. Then, wash without delay in cold running water. Do not bruise the leaves at any time as this allows the flavor to be lost. Lay the leaves on a dry towel while you make up the syrup.

To make the syrup, use a sweetened corn syrup such as Sweetose, using two parts of the syrup to one part of cold water. Then gently fill the container you will use so that it is full of the leaves, but not packed down cover this with the syrup and freeze.

The syrup has the ability to preserve and hold the flavor until used. To serve, it will thaw out in two hours at room temperature or if in a water tight container, it can be placed under running water where it will thaw out in 45 minutes. Try to serve soon after thawing for the best flavor.

TIME TO PLANT THESE SEEDS

From now on thru July seeds of the following should be planted.

West Coast:

Ofcourse, Pansies and Violas are at the head of the list at this time, if we list the ever popular Delphinium for late July. The following, too, should be planted at this time: Calendulas, Centaurea, Clarkia, Cynoglossum, Dimorphotheca, Linum or Scarlet Flax, Godetia, Larkspur, Iceland Poppies, Linaria, Nemesia, Schianthus, Snapdragon, Winter Stock and the winter type Sweet Peas.

In the South:

Repeated sowings of all sorts of annuals can be made as well as any of the perennials that are suitable for the South.

The North:

Only the biennials and perennials are in order in the North and the seed of just about all of these can be started now for flowers next season. Those whose seedlings are liable to be harmed by the summer sun should be protected by a frame and shading.

Pansies are one of the main seeds to get started in July but later in the month the ever popular Delphinium is all important; the object at this time is to get the seedling started early enough so that they can be set out in their permanent place in the garden so as to become well rooted before winter.

DELPHINIUM NOTES

Delphinium elatum was one of the original parents of our garden hybrids.

Belladonna was a chance garden hybrid and possibly Delphinium cheilanthum was one of the progenitors.

In addition to Delphinium elatum the species D. formosum, D. exaltatum, D. grandiflorum and D. scopulorum have been used in producing the common hybrids.

Delphinium tatsiense was used just prior to 1913, and is the progenitor of a new race of which only a few varieties are available.

Delphinium cardinale will cross with other species and with hybrids, but the blue seems to be dominant over red.

Delphinium Zalil has not been successfully crossed with other species or hybrids.

(From the American Delphinium Society's Bulletin.)

CANDYTUFT-ILEX OR HOLLY

IBERIS. (y-BEE-ris) CANDYTUFT. Cruciferae.

These come in half hardy annuals and evergreen perennials and easily grown from seed. The annuals can be sown the later part of May, they germinate quickly and flower early. In the South the seed can be sown in the fall. Keep the plants growing and well watered. Clip seed pods off as the plant easily goes to seed. All are rather low plants and make excellent flowers.

- affinis. Erect to 16"; fls white with lilac tinge; HA.....IBER-1. 15¢
- amara. Rocket Candytuft; erect to 12"; fls white; fragrant; HA.....IBER-2. 10¢
- coronaria. Fls with white crown; pretty type.....IBER-2C. 10¢
- Empress nana. Dwarf large white spike.....IBER-2E. 15¢
- princeps. Very dwarf but large heavy white spike.....IBER-2P. 15¢
- White Rocket. Large white spike.....IBER-2R. 15¢
- Miniature Gem. New, 4", with 4-6 spikes per plant.....IBER-2M. 15¢
- gibraltarica. Edging; large purple fls in flat clusters; to 10"; TP.....IBER-5. 15¢
- jucunda. (Aethionema coridifolium). 4-10"; fls rosy lilac in racemes; HP.....AETH-4. 25¢

NOTE: Flowers missed just before the Ipomoeas will be listed in the next issue.

IPOMOEA. (y-poh-MEE-ah) MORNING GLORY. Convolvulaceae.

Ipomoeas are mainly twining annual and perennial vines. The genus is widely distributed and comes in many kinds and habits. They are all easily grown from seed; for better germination file or cut a small notch in the outer covering. They are all tender and should be planted after all danger of frost is past. See Convolvulus and Quamoclit for other forms closely related.

- I. PURPUREA: The common garden Morning Glory; grows 6-8 feet high and makes ideal vines for fences, etc. Best in rather dry sandy soil; not too much watering
- Cornell. Beautiful cornelian red, bordered with white; pretty green fol.....IPOM-1C. 15¢
- Heavenly Blue. Sky-blue shading golden yellow in throat; early strain.....IPOM-1H. 15¢
- Pearly Gates. Free blooming pure white, faint creamy sheen in center.....IPOM-1P. 15¢
- Rose Marie. Only double; deep rose; early flowering.....IPOM-1R. 15¢
- Scarlet O'Hara. Dark wine-red; attractive foliage.....IPOM-1S. 15¢
- White Magic. Large fleecy white blending to cream in throat.....IPOM-1W. 15¢
- Red, White and Blue. The three colors equally mixed.....IPOM-1R. 15¢
- Large Flowered Types Mixed. Above varieties.....Oz. 75¢.....IPOM-1X. 15¢

- bona-nox. (Calonyction aculeatum) Moonflower; white fls.....IPOM-4. 15¢
- dissecta. Twining per; fls white with purple throat; Texas.....IPOM-8. 15¢
- Nil. Imperial Japanese M. G.; many very pretty colors.....IPOM-19. 15¢

ILEX. (Y-lexs) HOLLY. Aquifoliaceae.

Evergreen and deciduous trees and shrubs having glossy leaves and brilliantly colored berries. They are very ornamental but some species are not hardy in the far North. They require an acid soil and the germination of the seed will be more successful if the soil used is mostly peat or decayed saw dust. Seed should be stratified as they germinate the second year.

- aquifolium. English H. Best in NW; hardy to Ohio, very pretty; 40'.....ILEX-2. 25¢
- cornuta. Shrubby to 10 ft; hardy in E. States.....ILEX-9. 25¢
- crenata. Japanese H. To 20 ft; fine for the garden.....ILEX-10. 25¢
- fragilis.....ILEX-14. 25¢
- glabra. Inkberry. Hardy in N; black fr; for shade; evergreen.....ILEX-17. 25¢
- insignis. Small evergreen tree for the lawn.....ILEX-20. 25¢
- laevigata. Winterberry. Good; scarlet berries in clusters; swamps; 6'.....ILEX-21. 25¢
- opaca. American H. Dull red berries, hardy; the Xmas Holly; to 50'.....ILEX-28. 25¢
- verticillata. Black Alder. Sh to 10 ft; bright red berries; hardy.....ILEX-37. 25¢
- Mixed Ilex. All species mixed.....ILEX-X. 25¢

See our Tree and Shrub Seed List in the fall for Ilex Seed by the pound.

INCARVILLEA. (in-kahr-VIL-ee-ah) Bignoniaceae.

Showy and fairly hardy perennials from China, producing terminal clusters of red and yellow tubular flowers above basal group of vivid green leaves. Thrives in a well drained, rich light soil, and sunny place. Plant seeds up to August for next season flowering; give winter protection in the North.

- Delavayi. Rose-purple fls, yellow tubes; very nice; 2 ft; HP.....ICAR-2. 20¢
- grandiflora brevipes. RG; crimson-purple fls, gloxinia-like; 10"; HP.....ICAR-4B. 35¢
- Olga. Pale pink fls 1" ac; shrubby, to 3 ft; HP.....ICAR-7. 25¢
- variabilis. Cream to pale rose tubular s, ever-bearing; easy; HA.....ICAR-9. 25¢
- Mixed Incarvillea. All kinds mixed.....ICAR-9. 25¢

INDIGOFERA. (in-di-GO-fe-rah) INDIGO. Leguminosae.

Ornamental plants for borders and in shrubbery, many of which are not hardy in the far North. Some can be grown in the greenhouse or for window treatment.

- Dusua. Red fls in racemes; low shrub; India; TP.....INDI-5. 25¢
- Potaninii. Lilac-pink fls in racemes; hardy in North; sh to 5 ft.....INDI-13. 25¢

INULA. (IN-yu-la) Compositae.

Showy herbaceous perennials, most of which are hardy in the North; with large daisy-like heads of yellow or orange flowers. They make a brilliant display. Grows well in average soil but requires a sunny position.

- glandulosa. Solitary yellow heads 4 ft; HP.....INUL-6. 15¢
- Oculus-Christi. Pretty yellow heads; 2-3 ft; HP.....INUL-17. 25¢
- Royleana. Orange-yellow heads, one of the best; 2 ft; HP.....INUL-19. 25¢
- salicina. Golden yellow, 1½" ac; 2 ft; HP.....INUL-20. 20¢
- V. aspera.....INUL-20A. 25¢
- thapsioides.....INUL-23. 25¢
- Inula Mixture. All species mixed.....INUL-X. 20¢

ISATIS. (Y-sah-tis) WOOD. Cruciferae.

Annual, biennial and perennial plants. They are erect or branching with small yellow flowers from May to July; native of Med. regions; easily grown.

- glauca. For border; fls in large yellow clusters; 4 ft; HP.....ISAT-3. 15¢

JASIONI. (jaz-e-OH-nee) Campanulaceae.

Annual and perennials with blue or white flowers borne in heads and useful in the border or rockery; all are easily grown.

- perennis. Blue flowers in heads 1" ac; 1 ft; HP.....JAS-5. 15¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

COLLINSIA VARNA

Blue-eyed Mary. This is a pretty little plant that is attractive in beds. It grows about 12" tall with showy little flowers, the lower lip bright blue and the upper, white or purplish.

The seed ripens in June and should be planted as soon as ripe. Bailey lists them as annuals but ours is all sown in June when they germinate in early September, flowering the following June.

After you get them started they reseed themselves and you will always have these attractive flowers in your garden. They should be nice in the wild garden, under trees or shrubbery and such places. The seed comes in good sized packages and costs 50¢.

SUBSCRIPTION PRICE \$2.00 per YEAR.

We hope the new magazine you are reading will not only be of much interest to you, but more that it will also be of value in your gardening operations. We cannot send it out in the future free of charge; that's something the times prevent!

We will mail a copy or two to all on our present list and those not subscribing, will be considered as not interested and the name, to our regret, dropped.

The subscription price for the present is \$2.00 per year of 12 issues; however this will have to be raised soon to \$3.00. Those who have subscribed under the old rate will continue to receive the new magazine at the old rate till their subscription expires.

We cannot furnish back copies and as each issue is a continuation of the preceding one you will find them of more value if you have them all.

FLOWER SHOWS.

We will be pleased to publish notices of flower shows or public flower meetings if the information reaches us a good 40 days in advance.

SEEDS WANTED.

The following seeds are wanted and we would be pleased to hear from anyone knowing of a source:

Leontice, Aceranthus (an Epimedium?) and Leitneria floridana.

Gnaphalium sylvaticum, native of the north eastern states. Our reader who asks for this calls it "Golden Motherwort", however this may be wrong.

Cleome is easily grown from seed and should be planted in May when they germinate quickly. Thin the plants to 2 feet apart in the row. They make excellent border subjects and most desirable cutflowers; they flower from June till frost. Try them a hedge!

Approximately 13,000 seed per ounce.

SOME NEW ZEALAND SEED JUST IN.

The following seeds are all suitable for the South or for greenhouse culture in the North. We will be pleased to hear from any reader who has grown any of these flowers, please give your cultural treatment and uses for which the flower is especially adapted.

Hebe Bollonsii. Pale lilac flowers 1/3 in. across in racemes; 5 ft. HEBE-10. 30¢

Olearia furfuracea. Shrub to 20 ft; flowers in heads of 5-10. OLEA-10. 30¢

Celmisia petiolata. CLEM-5. 20¢

Entelia arborescens. Shrub to 20 ft; fls 1 in. across in cymes followed by fruits.

ENTE-1. 25¢

PIONEER SEED COMPANY

Dimondale - Michigan.

KNIPHOFIA - LARKSPUR - LIATRIS

KALANCHOE. (kal-an-KOH-ee) Crassulaceae.

Succulent perennials, shrubby in form with fleshy oval leaves and a mass of bright colored flowers that last for several weeks. Grown outdoors in the South and in the greenhouse in the North. For winter flowers start seed in the spring, using a gritty soil, sunshine, and plenty of water when growing.

- Blossfeldiana* v. *Ernest Thiede*. Bright red fls; 1 ft; fine; TP..... KALA-3T. 35¢
- lanceolata*. Orange fls on 2 ft stems; succulent; TP..... KALA-13. 35¢
- thyrsiflora*. Yellow fls ½" long; 2 ft; TP..... KALA-30. 35¢
- Kalanchoe Mixture*. All above mixed..... KALA-X. 25¢

KNIPHOFIA. (nip-HOH-fe-ah) TRITOMA, Torach Lily, Poker Plant. Liliaceae.

Most striking garden plants, flowering in the fall, with their dense cigar-shaped spikes of red or yellow tubular flowers. Seed sown indoors very early will flower same season, otherwise seed can be sown in August for next season flowering. In severe climates the plants can be dug up and stored in a frost free cellar.

- Pfitzer's Hybrids*. Large brilliant reds; HP..... KNIP-1P. 15¢
- Early Hybrids*. American grown strain; HP..... KNIP-1E. 15¢
- Uvaria Hybrids*. Large flowers, mixed colors; popular; HP..... KNIP-18. 15¢
- Royal Castle Hybrids*. A new color range and perfect form; HP..... KNIP-18R. 20¢
- Lubbe's Selections*. Extra choice German strain; HP..... KNIP-18L. 20¢
- verricrea Hybrids*. Creamy white and coral-red fls; early; HP..... KNIP-19. 15¢
- Kniphofia Mixture*. All the above mixed..... KNIP-X. 15¢

LATHYRUS. (LATH-e-rus) PRENNIAL PEA. Leguminosae.

A large genus of vines and erect plants, both annual and perennial. The perennials require no particular care but the annuals should have a deep moist soil and sunshine. Keep seed pods picked for a longer blooming period.

- latifolius*. Perennial Pea. Vine to 9 ft; white, red, purple and rose; HP..... LATH-16. 15¢
- Pink Beauty*..... LATH-16P. 20¢
- Rose Pearl*..... LATH-16R. 20¢

LARKSPUR. ANNUAL DELPHINIUM. Ranunculaceae.

Listed here are the so-called annual garden Larkspurs. There are various types or strains and while usually grown as annuals, they are really biennials. In the South seed should be sown in the fall and in the North sow either late in the fall or real early in the spring, where plants are to grow. Usually the seed is drilled in rows 2 to 2½ feet apart. They are especially used for cutflowers and do best in the cool part of the season; for good germination the seed requires a cold period and thus fall sown seed always germinates better; this is one reason for poor germination.

COCKADE STRAIN: A new type especially liked by commercial growers. Tall, symmetrical plants bearing long branches of full double florets; 4 ft. tall. HA.

- Pastel Shades*. Soft pastel colors correctly mixed for cutting..... LARK-2P. 10¢
- Blue*. Rich lilac-blue color..... LARK-2B. 10¢
- White Cockade*. Pure white..... LARK-2W. 10¢
- Cockade Mixed*. Correct blend for cutflowers..... LARK-2X. 10¢
- All Cockade Type: Oz. 60¢; ¼ lb. \$2.00; 1 lb. \$7.75, prepaid.

GIANT IMPERIAL STRAIN: Tall, upright, compact basal branching in habit and very popular for cutting. Large flower spikes of double florets; 4-5 ft.

- Blue Bell*. Beautiful mid-blue..... LARK-3B. 15¢
- Blue Spire*. Deep Oxford blue..... LARK-3S. 15¢
- Carmine King*. Improved; deep carmine-rose; holds its color..... LARK-3C. 15¢
- Dazzler*. Early flowering bright carmine..... LARK-3D. 15¢
- Exquisite Rose*. Beautiful rose pink..... LARK-3R. 15¢
- Gloria*. Deep rose on salmon..... LARK-3G. 15¢
- Los Angeles*. Brilliant pink on salmon..... LARK-3L. 15¢
- White King*. Pure white; large double florets..... LARK-3W. 15¢
- Miss California*. New, deep rose on salmon..... LARK-3M. 15¢
- Giant Imperial Mixed*. In correct blend for cut flowers..... LARK-3X. 10¢
- All Giant Imperials: Oz. 80¢; ¼ lb. \$3.00; 1 lb. \$9.50. Prepaid.

LIATRIS. (ly-AY-tris) BLAZING STARS, GAY FEATHER. Compositae.

Perennial plants, very attractive all summer and into autumn, especially when massed in the border. Flowers are in spikes or racemes. Easily grown from seed and not difficult to grow.

- callilepsia*. Purple fls; HP..... LIAT-2. 15¢
- pyncostachya*. Purple fls in dense spikes; 5 ft; HP..... LIAT-15. 20¢
- scariosa*. Purple fls; bracts purple tipped; 6 ft; HP..... LIAT-16. 20¢
- Liatris Blend*. All above mixed..... LIAT-X. 15¢

LIGULARIA. (lig-u-LAY-re-ah) Compositae.

Herbaceous perennials with broad basal leaves attractively marked and with many yellow ray-flower heads in racemes or corymbs on 5 ft. stems. They are of easy culture and useful in the border.

- clivorum*, *Orange Queen*. Heads 4" ac and pretty orange; 5 ft; HP..... LIGU-1Q. 20¢

LILIUM LIL-ee-um) LILY. Liliaceae.

Full list of seed will be in next issue.....We would like to hear from growers of seed.

LIMONIUM. (li-MOH-ne-um) STATICE, SEA-LAVENDER. Plumbaginaceae.

A highly prized flower both for the border and for commercial growing, many of those listed were formerly listed as Statice. They make fine everlasting or dried flowers; all easily grown from seed, the annual sorts sown early in the spring and the perennials anytime up to August for the next year's flowers.

- bellidifolium*. (S. caspia) White and pale blue; 8"; HP..... LIMO-2. 15¢
- Bonduellii*. Golden yellow fls; 2 ft; HA or HB..... LIMO-4. 15¢
- Hybrids*. New strain; interesting forms..... LIMO-14N. 15¢
- latifolium*. Immense lavender-purple heads; dry places; 2 ft; HP..... LIMO-16. 15¢
- L. SINUATUM:** Biennial or perennial, grown as a hardy annual. The leaves form low rosette at base of the stiff angular branching flower stalk. Used very much for cutflowers, drying, or in the border.
- Kampf's Tall*. Improved blue market strain..... LIMO-32K. 10¢
- Marktkonigen*. A new German strain in a perfect blue..... LIMO-32M. 15¢
- True Blue*. A California strain in a rich blue..... LIMO-32C. 15¢
- Sinuatum Sorts Mixed*..... LIMO-32X. 10¢
- Price on all L. sinuatum Sorts: Oz. 40¢; ¼ lb. 85¢; 1 lb. \$2.50, Prepaid
- Suworowii*. Bright rose spikes; easy house plant too; 18"; HA..... LIMO-36. 15¢
- Limonium Blend*. Mixture of all kinds..... LIMO-X. 10¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Among the Rocks and in the Sand

By Arthur G. Eldredge

Near the sea or in other localities where the soil is stony and sandy or all sand you may select plants that thrive in such a soil and so avoid the trouble and expense of adding top soil to create a normal type of garden. Even an acre of such land may be converted into an area of much beauty by treating it naturalistically. Perhaps it may already contain some of the typical plants found along the coast from Long Island northward or around the Great Lakes; if so you can help nature do the job somewhat faster.

Do not think of sand as a dry place particularly when only a few feet above the water table. The capillarity is perfect and so the surface transpiration causes a continual movement of moisture upward within a few inches of the surface. Rain cannot seal the surface as it does with a loamy soil. Sand is usually of acid reaction and contains much nourishment. It was produced by the glacial mill and contains in addition to silica, much ground up granite and other rocks. Granite is rich in feldspar, which is a potassium sodium calcium silicate that yields potash, lime and soda. There is also colcium phosphate and various combinations of iron and manganese. This material disintegrates slowly with the help of carbon dioxide brought down by the rain. The plant, however does not wait entirely on this procedure; the root-hairs attach to these insoluble particles and are able by means of their own chemical action to extract the goodness.

Bayberry delights in sand and exposure to salt air for thereby does it grow more compact and the foliage more robust and coriaceous. The birds will find those waxy seeds when there is little else above the snow.

Shepherdia canadensis loves to fight the icy gales either on the sandy shore of the Great Lakes or on the clayey edge of the bank high above. The leaves are downy and rusty, hard and leathery; the fruit is yellowish red. Rosa rugosa will grow within 25 feet of the surf, lying flat on the sand its foliage unharmed by the salty air.

Recumbent junipers are particularly suited to dry, poor soil and finer specimens are often seen in such locations than in richer soil, where too much kindness sometimes ruins them. Waukegan juniper is particularly beautiful, acquiring a strong bronze color in winter, lying close to the ground and draping well over the broken surface. Be sure that it is genuine Douglasii for sometimes the label is incorrect. Bearberry forms evergreen mats on any sandy location that few plants covet and glows with red berries in the fall. A little sand should be sifted over it each fall to create new growth that will fill in any winterkilled spots. It thrives from the Great Lakes eastward.

Wild Morning Glories and beach pea (*Lathyrus maritima*) are floriferous and happy in all degrees of sand while nearby the partridge pea *Cassia chaemacrista*, is full of yellow blossoms among its pinnate leaves that fold quickly if you strike them. Lupine and goat's rue, false Foxglove and Puccoon are showy in shades of blue, pink, yellow and orange. There too is the seaside Goldenrod, *S. sempervirens*, having the finest waxy foliage of all the tribe and a distinctive type of flower.

Hudsonia tomentosa covers the dunes in certain areas, causing them to glow with yellow.

(Continued on Page 46)

MECONOPSIS - MIGNONETTE

HYPERICUM. (hy-PER-i-kum) ST JOHNSWORT. Hypericaceae.

Very decorative perennial plants and shrubs usually with bright yellow flowers and many showy stamens. Grow best in a sand loam soil in partial shade. They are not real hardy in the North but if planted in a sheltered place and given winter protection they can be grown even in Michigan.

- Coris. Sub-sh to 1 ft; fls ¾" ac; for S only; TP..... **HYPR-18. 25¢**
- Hookerianum. Sh to 6 ft; fls 2½" ac; for far South..... **HYPR-40. 25¢**
- olypicum. Sub-sh to 1 ft; fls 2½" ac; hardy to Ohio..... **HYPR-40. 25¢**

MATRICARIA. (mat-re-KAY-re-ah) MATRICARY. Compositae.

Mostly annuals and a few perennials, with finely cut foliage and small flower heads. They are easily grown. There is little difference between them and Chrysanthemums. Chamomilla i also included here; treat them all as you would Chrysanthemums.

- indora v. Bridal Rose. Very double heads white ray fls; 2 ft; HA..... **MATI-3B. 15¢**
- Snowball. Small double heads of white ray-fls; 2 ft; HA..... **MATI-3S. 15¢**

MAURANDIA. (mau-RAN-de-ah) Scrophulariaceae.

Bright flowered plants, mostly vines, for the greenhouse or far South. If the seed is sown early they make excellent plants for baskets and vases in the open during the summer. For winter grow in the greenhouse at 60 degrees F in fibrous loam with leaf mold and cow manure.

- scandens. Purple fls 1" long; TP..... **MAUR-8. 25¢**

MECONOPSIS. (me-kon-OP-sis) Papaveraceae.

Annuals, biennials and perennials requiring a cool moist summer, a sheltered partly shaded place. They make attractive plants in the border. Start the annuals early indoors, setting out after frost danger is passed; the perennials are best started in a frame over the first summer. Flowers are in racemes or panicles; some are hardy, others semi-hardy in the North; the Northwest Coast states have ideal climate for them. Do not disturb after establishing them.

- betonicifolia. Purple fls in clusters 2" ac; 6 ft; HP..... **MECO-2. 25¢**
- Baileyi. Not much different to the above..... **MECO-2B. 25¢**
- cambrica. Welch Poppy. Pale yellow fls 3" ac solitary; 1½ ft; HP..... **MECO-3. 25¢**
- aurantiaca. Orange flowered type of above..... **MECO-3A. 25¢**
- calthcartii. Golden yellow fls, 2-3" ac; HP..... **MECO-5. 25¢**
- horridula. Light blue or claret solitary fls; 5 ft; HB..... **MECO-9. 25¢**
- integrifolia. Yellow Chinese Poppy. Yellow fls 6" ac; 3 ft; HB..... **MECO-10. 25¢**
- napaulensis. Satin Poppy. Pale blue satiny fls 2" ac; 6 ft; HP..... **MECO-13. 25¢**
- paniculata. Yellow fls 2" ac, racemes 2 ft. long; 5 ft; HP..... **MECO-14. 25¢**
- quintuplinervia. Lavender to purplish fls 3½" ac; RG; 1 ft; HP..... **MECO-16. 40¢**
- simplicifolia. Nodding blue or purple solitary fls 3" ac; 2 ft; HP..... **MECO-18. 40¢**
- Meconopsis Mixture. All species mixed..... **MECO-X. 25¢**

MICHELIA. (my-KEE-le-ah) Magnoliaceae.

Trees and shrubs from Asia much like Magnolias and grown only in the South.

- cathcartii..... **MICH-1. 25¢**
- excelsa..... **MICH-4. 25¢**
- lanuginosa..... **MICH-8. 25¢**

MIGNONETTE. (Reseda) Resedaceae.

Mignonette belongs to the genus RESEDA of which there are 3 or 4 species with R. odorata is the common Mignonette. They are noted for their fragrance, are tender annuals and when started indoors are best handled in pots as they do not transplant easily. Thrives in a cool moderately rich soil in partial shade; in the greenhouse grow in cool part around 48 degrees F; they are very popular.

RESEDA ODORATA: Comes in shades of blue.

- Allen's Defiance. Compact, florets immense size; very fragrant..... **MIG-1A. 15¢**
- Machet Giant. Pyramidal growing plants, very nice; 12"..... **MIG-1M. 15¢**
- Golden Goliath. Golden yellow fls; 12"..... **MIG-1MG. 15¢**
- Red Goliath. Large red fls; special strain; 12"; fragrant..... **MIG-1MR. 15¢**
- White Goliath. Best large white..... **MIG-1MW. 15¢**
- Bismarck. Beautiful flat top and large spikes..... **MIG-1B. 20¢**
- Gabrielle. Robust, heavy red spikes..... **MIG-1G. 15¢**
- grandiflora. Large flowered, 16" tall..... **MIG-1F. 15¢**
- Red Monarch. Deepest red; perfect form..... **MIG-1R. 15¢**
- Victoria. Brilliant red; prize wonned..... **MIG-1V. 15¢**
- Mignonne Blend. All varieties mixed..... **Oz. 30¢ MIG-X. 10¢**

MIRABILIS. (my-RAB-e-lis) FOUR O'CLOCKS, MARVEL OF PERU. Nyctaginaceae.

Annuals and perennials, all of which are tender and grown as tender annuals in the North. The seeds are best sown where the plants are to grow and in the fall the roots can be taken up and stored in the root cellar over winter.

- Jalapa. Four O'Clocks. Red, yellow, white; 3 ft; TP as TA **25¢ Oz. MIRA-6X. 15¢**
- Dwarf. A dwarf compact type in red, yellow and white; 2 ft..... **MIRA-6DX. 15¢**
- Dwarf Variegated. Variegated leaves; mixed colors; 2 ft..... **MIRA-6DV. 20¢**
- longiflora v. White. White fls; 3 ft; TP grow as TA..... **MIRA-7W. 20¢**
- Violet. Violet fls of same..... **MIRA-7V. 20¢**
- Mixed. Violet and white mixed..... **MIRA-7X. 15¢**
- uniflora. Bright rose; showy and unusual; free blooming..... **MIRA-10. 20¢**
- Mirabilis Blend. All kinds mixed..... **Oz. 25¢ MIRA-X. 15¢**

MONARDELLA. (mon-ahr-DEL-ah) Labiatae.

Fragrant western American plants both annual and perennial. They are grown in the rockery in light sandy soil. Native of California.

- villosa. Purple, pink and white 2-lipped fls; hot places; 6"; HP..... **MONA-8. 30¢**

Explanation of the headings. The headings for each genus, starts with the genus name, Mirabilis, followed by the pronunciation; next in capitals as FOUR O'CLOCKS, are the common names, if any; then the family to which it belongs, always ending in eae, which will help many flower growers in classifying many of its requirements. The figures in brackets as (*15 days) are the days required for a normal germination and the star * before, if present, means that the time is variable but germination can be looked for at the time indicated; star alone means no definite time and it could be a year.

The letters C and W stand for cool and warm, above or below about 60 degrees F; D and L stands for dark and light, to keep the seed pan in a light or dark place when the seeds are germinating. Keep in mind these are general terms and are variable.

PIONEER SEED COMPANY — DIMONDALE MICHIGAN

DWARF MARIGOLD Pots O'Gold

It is an exceptionally new dwarf growing form, is sweet scented with 4-4½ inch flow-



ers on 12-15 inch plants which are free flowering, neat and compact.

The strain listed as Gypsy Jewels also come under this type and in brilliant shades of orange, yellow and primrose.

Pots-O'Gold is a golden orange color and will make a beautiful display in the border. Give it a rich soil and full sun.

Pkt. each variety 15¢; Both 25¢; 1/4 Oz. 55¢.

VIBURNUM GERMINATION.

Viburnum seed is usually slow to germinate. The best time to plant the seed is in late summer when it will have two months of warm weather before freezing. Cover the seed with half inch of soil and mulch with straw after the soil freezes but remove promptly in the spring before germination starts. Virburnum seed can also be stratified a full year and then sown in seed bed.

One common failure in Viburnums is the loss of the seed thru rodents, so cover your seed bed with screen.

ITALIAN EDIBLE GOURD

Over the years, we have never ceased to be amazed at the vigor of this edible gourd. Actually, of all the cucurbits, it has the fastest growth of any. Planted in warm weather, the progress per day is tremendous, and for the covering of fences, trellises, etc., nothing can compare.

In the case of a similar type where the laterals were picked off and the plant fed a quart of milk per day, the growth of the vine reached 120 feet.

For edible purposes this strain is a favorite with the Italians, who cook it as you would a summer squash. The flowers are also fried in butter, and we understand, are considered a rare delicacy, by them.

ARE YOU PARTIAL?

We have any older member of the family whose likes and dislikes are very strong.

To pick out one of the grandchildren as perfect and another to be just the opposite leaves life sort of one sided, don't you think?

But how many flower growers are not just as bad in their attitude towards their flowers? Recently a friend whom I had not seen for several years, stopped while I was in the Iris field and right when they were in full bloom. After making a few remarks he got to talking about his roses, of which he has a large collection, and during his entire visit of 15-30 minutes, he never mentioned the Iris, over which he was standing, in fact he was 4-5 rods in the field.

So many people talk and talk about one kind of flower; how much are they losing by ignoring all the other beautiful ones around them! Don't be partial!

SUBSCRIPTION price now \$2.00 per year

MYOSOTIS - NASTURTIUMS

MUSCARI. (mus-KAY-ry) GRAPE HYACINTHS. Liliaceae.

Spring blooming bulbs with urn-shaped nodding fls in racemes or spikes. They are easily grown, both from seeds and bulbs; for the latter see the fall bulb listing. Used especially for colonizing in mass plantings.

—**azureum**. (Hyacinthus) Fls in erect racemes, 1 ft; HP..... **HYAC-2. 25¢**
—**comosum**. Blue or violet fls; 1 ft; HP..... **MUSC-3. 25¢**

MYOSOTIS. (my-oh-SOH-tis) FORGET-ME-NOTS. Boraginaceae. (16 days)

Small annuals, biennials and perennials with many small blue, rose or white flowers in terminal racemes. They thrive in a cool moist partially shaded places. They are grown in the low border and are especially nice. They bloom the second year or if started early, in the fall of the first year.

VARIETY LISTING: We list here all the varieties following; some belong to a species but most are hybrids of superior breeding.

—**A. Fischer**. Deep blue, large fls; very choice; 8 in..... **MYOS-1A. 25¢**
—**Blue Ball**. Deep indigo blue; compact ball-shaped plants, 10"..... **MYOS-1B. 25¢**
—**Blue Bird**. A large flowered variety in dark blue..... **MYOS-1D. 25¢**
—**Blue Eyes**. Pretty bright blue with white eye..... **MYOS-1E. 25¢**
—**Boden**. A Swiss variety of perfect form; very dark blue fls..... **MYOS-1N. 25¢**
—**Gerda Seager**. Blooms 8-10 days earlier; pretty blue..... **MYOS-1S. 25¢**
—**Indigo Blue**. Very deep blue form..... **MYOS-1G. 25¢**
—**Marga Seager**. Excellent pot plant for forcing; large blue fls..... **MYOS-1R. 25¢**
—**Messidor**. Rich blue color..... **MYOS-1M. 25¢**
—**Star of Love**. Sky blue, nice pot plant; floriferous..... **MYOS-1T. 25¢**
—**Sylphe**. A pure white form..... **MYOS-1W. 25¢**
—**Victoria**. Dwarf, dark royal blue..... **MYOS-1V. 25¢**
—**Mixed Myosotis**. All the varieties equally mixed..... **MYOS-X. 20¢**
—**arvensis**. White and blue; best for naturalizing; 18"; HA or HB..... **MYOS-2. 15¢**

This seed list continues from page to page and from issue to issue and runs alphabetically.

NASTURTIUM. (nas-TUR-ee-um) (Tropaeolum) Tropaeolaceae. (8 days)

This is a much confused classification with Water Cress, Nasturtium officinale being the only listed species. The flowers listed in the trade and also commonly known as Nasturtiums belongs to the Tropaeolaceae Family, with the genus Tropaeolum being the only member. It has several species, including the Canary Bird Flower. The species major includes all the commonly grown Nasturtiums, both bush and climbing.

Grow them as tender annuals giving them a warm sunny position, planting seed direct to the soil. They also can be started in pots for setting outdoors when the weather is warm; they are tender and will stand no frost. They can be planted even in June here in Michigan. They are good for the Tulip beds, using the climber or tall type.

SEMI-DOUBLE GLEAM: A very popular type, with double and semi-double flowers. The plants grow to 18" tall and are excellent for cutting Oz. 30¢; 1/4 lb. 80¢.

—**Crimson Glow**. Deep glowing golden orange..... **NAST-1C. 15¢**
—**Fire**. All double bright scarlet..... **NAST-1F. 15¢**
—**Golden Gleam**. A lovely golden yellow variety..... **NAST-1G. 15¢**
—**Indian Chief**. A new double, sweet scented, dark leaves..... **NAST-1N. 15¢**
—**Moon**. Semi-double yellow..... **NAST-1M. 15¢**
—**Orange Gleam**. One of the best orange varieties..... **NAST-1A. 15¢**
—**Salmon Gleam**. Lovely and popular..... **NAST-1S. 15¢**
—**Scarlet Gleam**. An excellent red variety..... **NAST-1L. 15¢**
—**Gleam Mixture**. Contains all the colors and many hybrids..... **NAST-1X. 15¢**

GLOBE TYPE: Giant double flowers in all the colors; plants compact, 12" tall and excellent in beds, etc. Oz. 30¢; 1/4 lb. 90¢.

—**Black Beauty**. Deep scarlet flowers and very dark foliage..... **NAST-2B. 15¢**
—**Delightful**. Soft salmon-cerise..... **NAST-2D. 15¢**
—**Scarlet Emperor**. Fine scarlet and dark foliage..... **NAST-2E. 15¢**
—**Golden Globe**. One of the best golden yellows..... **NAST-2G. 15¢**
—**Golden Rose Emperor**. Lovely rose color with dark leaves..... **NAST-2R. 15¢**
—**Mahogany Gem**. Deep mahogany color..... **NAST-2M. 15¢**
—**Scarlet Globe**. Very popular scarlet..... **NAST-2S. 15¢**
—**Globe Type Blend**. Made up of many varieties..... **NAST-2X. 15¢**

DWARF or TOM THUMB TYPE: These all have single flowers, the plants growing about 12" tall. They will stand more neglect than the double type.

—**Empress of India**. Velvety dark scarlet with dark leaves..... **NAST-3E. 15¢**
—**Falham Beauty**. A rice brilliant scarlet..... **NAST-3F. 15¢**
—**Fireball**. Compact, dark leaves, bright scarlet fls well above foliage..... **NAST-3B. 15¢**
—**King of the Tom Thumbs**. Bright scarlet; dark leaves..... **NAST-3K. 15¢**
—**King Theodore**. Dark red; dark foliage..... **NAST-3T. 15¢**
—**Lady Bird**. Lovely rich yellow, scarlet spotted; dark leaves..... **NAST-3L. 15¢**
—**Ruby King**. Ruby-red flowers; dark foliage..... **NAST-3R. 15¢**
—**Vesuvius**. Brilliant salmon-rose; dark leaves..... **NAST-3V. 15¢**
—**Single Mixed**. Contains many fine varieties; all single flowers..... **NAST-3X. 15¢**

TALL or CLIMBING TYPE: These will grow 3'; should have some support; Oz. 30¢.

—**Chameleon**. Comes in several blends of colors..... **NAST-4C. 15¢**
—**Dunnett's Orange**. One of the best orange varieties..... **NAST-4D. 15¢**
—**King Theodore**. Dark foliage and dark red flowers..... **NAST-4K. 15¢**
—**Pearl**. Lovely cream white..... **NAST-4P. 15¢**
—**Prince Henry**. Lovely yellow with red spots..... **NAST-4H. 15¢**
—**Von Moltke**. A lovely rosy blue..... **NAST-4V. 15¢**
—**Tall Blend**. Made up of many varieties..... **NAST-4X. 15¢**

NEPETA. (NEP-e-tah) CATNIP. Labiatae.

Aromatic annuals and perennials with white and blue flowers in whorls, clusters or spikes. Some species are very pretty and can grow in shady places. They all are easily grown from seed.

—**Cataria**. Catnip. Whitish or pale purple fls; 1 1/2 ft; HP..... **NEPE-3. 10¢**
—**Mussinii**. Blue fls with dark spots; bushy, pretty; 18"; HP..... **NEPE-10. 15¢**

ONOSMA. (oh-NOZ-mah) Boragmaceae.

Annuals, biennials and perennials with extremely attractive flowers in white, yellow or purple in one-sided clusters. They do well in sun or shade and are suitable for the border or rockery. Not hard to grow.

—**stellulatum v. lauricum**. Gold Drop. Golden yellow; wall plant; 8"; HP.... **ONOS-8. 25¢**

This seed list continues from page to page and from issue to issue and runs alphabetically.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

Growing Begonias from Seed

By Mrs. Philip C. Smith, Pa.

I plant my first seed in January in closed glass top jars in a mixture of shredded woods moss, oak leaf mold and garden soil, which I mix and bake in the oven until the leaves start to smell as tho starting to burn. Then I store this after cooling, in a flour sack for use in the winter. Then before using I re-heat and wet with lukewarm water and scatter the seed over the surface. I use large mouth pickle or Cresco jars or anything I am able to get my hands inside and cover with grass. In six weeks they are ready for their transplanting altho the rarer kinds are usually small. I use a popcicle or lollipop stick to move them the first time and make no effort to divide them as they are usually very thick. I transplant them twice. To hybridize, I select plants I like very much and take a male flower and place the pollen on a female flower, then tie a piece of clean plastic over the fertilized bloom; I usually select 2 or 3 blossoms on each cluster. The results are sometimes odd such as striped and two-toned flowers, semi-double and doubles on the same cluster. The greatest success I have had was a cross between a beefsteak and a double Geneva-red. The leaves were round like a beefsteak but shaped like a wax Begonia leaf and some were red and some pure green on the same stock with flowers the size of a quarter and in every possible shade of pink to dark red on the same stock, both single and double.

Everyone admired it so much I gave cuttings away.

Mrs. Smith continues to tell how she got started to grow Begonias and that she has as many as 1,500 each season. She surely gets a as given in a circular of the North American does and we wish we will be instrumental in inducing others to become interestet in some flower.

FRIENDLY PEOPLE

Competitors, no matter what their line, very often are jealous of each other and it is so easy to neglect to pass on little helps, that in the long run, would be kindly acts.

In my own experience, I have noticed this very much and admit of being guilty, too, to an extent.

But I want to mention here, especially, two firms, who to my knowledge, are exceptions. The W. Atlee Burpee Co., of Philadelphia and the Joseph Harris Company of Rochester, N. Y. Both of these firms do not hesitate to suggest other firms to their customers, when some seed or plant is wanted of which they happen not to sell.

So we wish to acknowledge here the many references made by both these firms to their customers in our case.

It is not necessary for me to recommend these two firms for they already enjoy the best reputation and both are large and leading seed supply house; both are old companies and cater to the most critical trade.

Harry E. Saier.

PEAT MOSS FOR ACID

LOVING PLANTS

For many plant such as Azalias, Clematis, Hemlocks, Hydrangea (blue), Kalmia, Laurel, Pieris, Rhododendrons, Taxus, Blueberry, Strawberry etc., the use of peat moss mixed about one to two parts moss to four of the soil, will give excellent results.

All Ericaceaeous plants thrive when their roots are in contact with peat moss.

LINUM FLAX - LUPINE - LUNARIA

LINNAEA. (li-NEE-ah) TWIN-FLOWER. Caprifoliaceae.

Subshrubs suitable for the rockery thriving in a moist peaty or woody soil.
—**borealis**. Dainty trailer; bell-shaped rose fls; glossy ev; HP..... LINN-1. 30¢

LINUM. (LY-num) FLAX. Linaceae.

Annual and perennial plants and shrubs with blue, white or yellow flowers, popular in the border. Grow in full sun and sow the annual forms direct to the garden early in the spring; the perennials up to August for next year's flowers. Easy to grow.

- flavum**. Golden yellow fls; 1 ft; half hardy in North; HP..... LINM-14. 15¢
- compacium**. Compact form especially suitable for RG; HHP..... LINM-14C. 20¢
- grandiflorum**. Red to bluish purple fls, 1½" ac; 2 ft; HA..... LINM-16. 15¢
- coeruleum**. Very showy bluish purple; HA..... LINM-16C. 15¢
- roseum**. Large rose-pink fls; HA..... LINM-16R. 15¢
- Blue**. Very popular cutflower; HA..... LINM-16B. 15¢
- Lewisii**. More robust than L. perenne; 18"; Mont; HP..... LINM-19. 15¢
- perenne**. Deep blue fls; 18" tall; very good; HP..... LINM-26. 15¢
- White**. A white flowered form of above; HP..... LINM-26W. 15¢
- Linum Blend**. All the above kinds mixed..... LINM-X. 10¢

LITTONIA. (lit-TOH-nee-ah) Liliaceae.

Climbing or erect plants with bell-shaped orange or yellow flowers and tuberous roots; easy to grow in a sunny window; give rest in early winter. Related to Gloriosa.
—**modesta**. Bright orange bells, 1" ac; good summer house plant..... LITT-1. 25¢

LUNARIA. (leu-NAY-ah) SATIN-FLOWER, HONESTY, MOONWORT. Cruciferae.

They come in an annual and a perennial species; are grown mainly for the pretty dried flowers. Sow seed early for the annuals and any time up to August 20th for the perennials. The annuals are often biennial.

- annua**. 18" tall and comes in white, red and purple fls; HA or HB..... LUNA-IX. 10¢
- White**. Pure white fls..... LUNA-1W. 15¢
- Crimson**. A dark crimson colored flower..... LUNA-1C. 15¢
- Munstead Purple**. A fine strain for dried flowers..... LUNA-1M. 15¢
- Variegated**. The leaves are variegated in this strain..... LUNA-IV. 20¢

LUPINUS. (lu-PI-nus) LUPINE. Leguminosae.

Flowers in great profusion on long stemmed spikes; both annual and perennial sorts are excellent for display in the border or for cutting. They grow on any well drained soil and thrive even on poor land; sow seed where plants are to grow.

- arboreus**. Lavender fls; shrub to 8 ft; TP..... LUP-7. 15¢
- Hartwegii**. Blooms July-Sept; best annual species; HA..... LUP-25. 15¢
- Blue**. In a light shade..... LUP-25B. 15¢
- White**. Pure white..... LUP-25W. 15¢
- Celestial Blue**. Sky blue..... LUP-25C. 15¢
- Rose**. A deep rose color..... LUP-25Z. 15¢
- Lyallii**. For the RG; easily grown; to 4 ft; HP..... LUP-34. 20¢
- nanus**. Blue with purple-dotted spots; fragrant; May-June; 15"; HA..... LUP-40. 15¢

L. POLYPHYLLUS: The tall perennial Lupin, hardy in the North, with winged flowers flowers in many beautiful colors, blooming most of the summer. They are easily grown and their brilliant spikes will make an showy display in any border; to 5 ft; June-Sept.

- Carmine**..... LUP-50C. 15¢
- Blue**. A pale blue or sky blue..... LUP-50B. 15¢
- Yellow**. A nice bright color..... LUP-50Y. 15¢
- Moerheimi**. Pretty rose and white flowers..... LUP-50M. 15¢
- Princess Juliana**. Dwarf bright pink, 3 ft tall..... LUP-50J. 15¢
- Salmon Queen**. Beautiful shade of salmon-rose..... LUP-50S. 15¢
- Terre Cotta**. In various shades of terre cotta..... LUP-50T. 15¢
- Russel Hybrids**. This is a very superior strain in bright colors..... LUP-50R. 20¢
- L. polyphyllus Blend**. Hand made blend..... Oz. 35¢; Lb. \$3.80; LUP-50X. 15¢
- subcarneus**. Texas Blue-bonnet. Bushes 15" tall; massive fl spikes; HA..... LUP-56. 15¢

LYCHNIS. (LIK-nis) Caryophyllaceae.

Brilliantly colored flowers and easily grown from seed; if sown indoors early, will flower following June and July. Requires plenty of sunshine and a rather dry soil. They are related to the Silenes and the dominant color is red; herbaceous HA and HP.

- alpina**. Pink fls; dense terminal heads; tufted; 1 ft; HP..... LYCH-2. 30¢
- Arkwrightii Hybrids**. Showy; nice color range; 18"; HP..... LYCH-4. 20¢
- chalcidonica**. Scarlet fls in dense term. heads; June-July; 2-3 ft; HP..... LYCH-7. 20¢
- Coeli-rosa**. Rose-of-Heaven. Rose red term. fls; 18"; HA..... LYCH-8. 15¢
- Coronaria**. Rose Champion. Crimson; terminal fls; 3 ft; HB or HP..... LYCH-10. 15¢
- astrosanguinea**. Dark blood-red fls of above..... LYCH-10A. 15¢
- Red**. Deep red color..... LYCH-10R. 15¢
- Flos-cuculi**. Cockoo-fl. Red or pink panicle fls; May-Aug; 15"; HP..... LYCH-13. 25¢
- Flos-Jovis**. Fl. of Jove. Pink in dense umbels; June-July; 18" HP..... LYCH-14. 20¢
- Forrestii Hybrids**. Shades of pink to crimson and white; 20"; HP..... LYCH-16. 15¢
- Haageana**. Hybrid, orange-red, scarlet fls; May-June; 20"; HP..... LYCH-19. 15¢
- Viscaria**. Red and purple, ½ in. ac, clusters; May-June; 18"; HP..... LYCH-30. 15¢
- Lychnis Blend**. Mixture of all kinds..... LYCH-X. 15¢

LYSIMACHIA. (ly-si-MAY-ki-ak) LOOSESTRIFE. Primulaceae.

Annual and perennial summer blooming flowers in white or yellow, sometimes purple and blue, in spikes or racemes. They are grown in moist places.

- punctata**. Yellow fls in whorls; 3 ft; HP..... LYSM-14. 20¢
- ramosa**..... LYSM-15. 20¢
- Lysimachia Blend**. Mixture of those in stock..... LYSM-X. 15¢

AN EXPLANATION: The numbers used in listing our seeds is simple and helpful to the buyer, once they are understood. Each species is given a number according to its alphabetical position; all varieties or forms of this species, always has the same number but each form has a letter with the number; the letter X always stands for a mixture and if after a number it is always a mixture of the forms of that species only but if the X follows the genus symbol and without any numbers, it is a mixture of the entire genus. In the listing of the names the dash (—) always means it belongs to genus above and two dashes, (—) means it belongs to the species just above.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

COMMON NAMES WANTED.

Lawson Bailey of Fla asks for the botanical and common names of the following plants.

Bolusanthus speciosus; we not know of any common name but it is the only species in this genus and a tree growing about 15 feet high; it is suitable only for the South.

Caesalpinia Gilliesii should be *Poinciana Gilliesii*, a S. American shrub or small tree with light yellow flowers and bright red stamens; other than *Poinciana*, we know of no other name.

Convolvulus Randii Comes from South Rhodesia. We presume it has some local name there but there is none used in this country. It is small and shrubby and suitable for the South only.

Erythrina humeana, the genus is known as Coral Tree but we know of no common name altho these are grown in the South

The *Bauhinias* are tropical shrubs or trees. There has been many inquiries for the yellow species, of which there 4 or 5 and as most come from India, we shall have seed of the new crop as soon as it is ripe.

PENSTEMON BRANDEGEL.

The brandegi is a great favorite with me, and the easiest kind I grow, volunteering all over the garden. It grows from two to three feet high, depending on the season and location; has large bells of clear pure azure blue and old clumps produce many spikes of bloom. Myrtle Hebert, Montana.

AMONG THE ROCKS

AND IN THE SAND

(Continued from Page 43)

low bloom in the spring. The evergreen scale-like leaves and stems stay close to the sand and if drifted over, they continue to grow above it. An emigrant from Europe, a long time here is Dusty Miller. Along the seaside and the lake shores it forms large mats of hairy, silvery gray leaves as soft as a lamb's ear.

A border planting to wall in such an area may consist of Scotch broom, gorse, beech, plum and sand cherry, the two latter are native to the lake region and are snowy with bloom which is followed by edible fruit. To these may be added suitable pines and if close to the water table *Ilex glabra* and the swamp Blueberry will do well. The latter will give you a feast of berries to be followed with scarlet and crimson leaves when the frost comes along.

SEA HOLLY CULTURE WANTED.

Lydia Lyon of Cleveland, Ohio wants cultural information on the growing of Sea Holly. Will one of our readers who has grown this send in their methods. We assume it is a commercial undertaking and therefore information as to its harvest is also wanted.

ASCLEPIAS CURASSAIRCA.

This makes a showy pot plant from July to September. Grows 2 feet high and with large clusters of orange-scarlet flowers.

If the seed is sown in February it will produce flowering specimens in late summer and if held on the dry side during the following winter, repotted in the spring in a compost of good loamy soil and leaf mold with the soil well firmed in the pot, a beautiful pot specimen will be had for the following summer. Ofcourse, prune back the growth when repotting.

MALCOMIA-STOCKS-MACLEAYA

PLEASE NOTE: The symbols used for ordering each kind of seed will make it not only easier for you to order, but also more definite as to the exact strain or variety, especially in many kinds where the listing is complex; in ordering make our symbols very plain, for instance here in Linum, the symbol is LINM and there is also a LINN symbol used for Linnaea; it is easy to make the M and N to look alike.

MACHAERANTHERA. Compositae.

A genus of American daisy-like annuals, biennials and perennials, similar to hardy Asters. Tahoka Daisy is the commonly grown species.

—*tanacetifolia*. Blue fls; June-Nov; sow late fall, ey spring; HA..... **MACA-1. 20¢**

MACLEAYA. (mah-KLAY-rah) PLUME POPPY, BOCCONIA. Papaveraceae.

Perennials used for their bold and attractive habit and appearance. The flowers are small and in terminal panicles.

—*cordata*. Lvs 8" ac; specimen plants; 6 ft; HP..... **MACL-1. 15¢**

—*microcarpa*. Differs from *M. cordata* in flowers; 6 ft; HP..... **MACL-3. 20¢**

MAHONIA. (ma-HOH-ne-ah) Berberidaceae.

Perennial evergreen shrubs, similar to Barberry. The flowers are yellow and in racemes followed by blue berries. Some are hardy in the North and should be planted in a sheltered place from the wind and hot sun.

—*repens*. Low growing; bluish green lvs; hardy in N; 1 ft; HP..... **MAHO-16. 20¢**

MARYGOLDS. (Tagetes) Compositae.

For Marigold List see in following Issues, please, or write for old list.

MALCOMIA. (mal-KOH-me-ah) MALCOME STOCKS. Cruciferae.

Annuals and perennials from Med. regions, mostly grayish leaves. Plant seeds early indoors or direct to garden. In *M. maritima* sow seeds every 2 weeks for a succession bloom.

—*maritima*. Va. Stocks. Mixed colors; fine for border; 12"; HA..... **MALC-3X. 15¢**

—*Yellow*. Rich clear yellow..... **MALC-3Y. 15¢**

—*Rose*. Deep rose color..... **MALC-3Z. 15¢**

—*Crimson Gem*. The best red..... **MALC-3C. 15¢**

—*White*. Pure white..... **MALC-3W. 15¢**

MALVASTRUM. (mal-VAS-trum) FALSE-MALLOW. Malvaceae.

Mallow-like plants and subshrubs with purple, yellow or red flowers, usually in terminal spikes. Makes nice plants in the border and sometimes grown in the greenhouse.

—*coccineum*. Prairie-M. Brick-red fls, 1" ac; 8 ft; hardy, HP..... **MALV-3. 20¢**

MATHIOLA. (mat-THY-oh-lah) STOCKS. Cruciferae.

Annuals and perennials, some subshrubs native mostly of the Med. regions and commonly known as Stocks. The flowers are in lilac, purple and white in terminal racemes. *M. bicornis* is the Evening Stock or Perfume Plant, very fragrant in the evening but the flower is closed during the day. *M. incana*, the common Stocks or Brampton Stock or Gilliflower and a type of this is the Ten-Weeks-Stock.

—*bicornis*. Lilac fls; July-Sept; sow early; 15"; HA..... **MATH-1. 20¢**

M. INCANA: This biennial or perennial with one annual type, sturdy, erect plants in many colors. Stocks are not only grown outdoors but make good greenhouse plants and for this purpose the seed should be planted in late autumn or early winter. For outdoor planting, seed can be started indoors in February. Seed sown in summer will make good house plants for winter. They are usually handled as half hardy subjects and in the far North would not winter over.

—**DOUBLE GIANT COLUMN STOCKS:** Immense fully double close spaced flowers, one 2-2 1/2 ft. spike per plant. This is strictly a non-branching strain especially used by florists. Those listed are all popular colors and the best yet developed.

—**Ball 14, Rose-pink**. Deep rose-pink, the best..... **MACH-2Z. 35¢**

—**Balls 16, White Improved**. Best greenhouse white to date..... **MACH-2W. 35¢**

—**Ball's 22, Supreme**. Silvery rose, the best pink..... **MACH-2S. 35¢**

—**Ball's 24, Apricot**. Long stemmed, deep apricot color..... **MACH-2A. 35¢**

—**Illusion**. Beautiful scarlet-red; color chart 27 shading to 24..... **MACH-2N. 35¢**

—**Royal Purple**. True deep purple, deeper than Ball's Purple Heart..... **MACH-2P. 35¢**

—**Silvery Lilac**. Best lavender; 634/2..... **MACH-2L. 35¢**

—**White Pillar**. New white for outdoor growing..... **MACH-2H. 35¢**

—**Yellow Wonder**. Best deep creamy yellow, yellow singles..... **MACH-2Y. 35¢**

—**Giant Column Blend**. A hand made blend of colors..... **MACH-2X. 30¢**

Above kinds, per Oz. \$8.00; per 1/4 lb. \$20.00.

EARLY GIANT IMPERIAL: Of branching habit, the large flowers and long stems of this class makes it especially desirable for cutting. Very early blooming and produces a high percentage of doubles; 26 inches.

—**Blood Red**. Color 27 shading to 24..... **MACH-3B. 20¢**

—**Chamois**. Ivory, color 606/3 tinged old rose 3/3..... **MACH-3C. 20¢**

—**Golden Rose**. Light golden rose, 630 and 630/2..... **MACH-3G. 20¢**

—**Lavender**. Silvery lilac; 634/2..... **MACH-3L. 20¢**

—**Rose**. Deep rose-pink, 630 and 630/1 white centers..... **MACH-3Z. 20¢**

—**Santa Maria**. Giant pure white..... **MACH-3M. 20¢**

—**Shasta**. Glistening white, tall, robust..... **MACH-3S. 20¢**

—**Giant Imperial Blend**. A carefully hand made blend of colors..... **MACH-3X. 20¢**

All Giant Imperial varieties: Oz. \$2.50; 1/4 lb. \$7.75.

TEN-WEEKS-STOCKS: Dwarf, compact, branching and fine for bedding; sweet scented; 12 inches tall. Usually grown as an annual and very popular for outdoors on account of its earliness. Listed as Dresden Stocks and Cut-and-Come-Again. Start seeds early in the spring, either indoors or outside where they are to grow.

—**Brilliant Rose**. A carmine-pink, soft rose-pink..... **MACH-4Z. 15¢**

—**Crimson**. Color 27 shading to 24..... **MACH-4C. 15¢**

—**Light Blue**. An azure-blue, 32/1..... **MACH-4B. 15¢**

—**Purple**. A dark blue, 732/2..... **MACH-4P. 15¢**

—**White**. The best white variety..... **MACH-4W. 15¢**

—**Finest Mixed**. All colors and shades in best blend..... **MACH-4X. 15¢**

ALL TEN-WEEK-STOCKS: Ounce, \$1.75; 1/4 lb. \$15.00.

PIONEER SEED COMPANY

DIMONDALE MICHIGAN

IRIS GREAT LAKES

By Walter Welch, Indiana.

Now that Great Lakes has been installed in the Hall of Fame with the proper ceremonies what blue variety have we to take its place? The answer is none!

The leading contenders for its position are Blue Rhythm, Helen McGregor, Chivalry and Blue Valley. Following closely behind these are Azure Skies, Distance, Bandmaster, Sylvia Murray and Cahokia. There is no scarcity of good blues, in fact, this color classification represents about the finest examples in all Iris.

Great Lakes Irreplaceable

One has only to look at the record of Great Lakes to realize that it is irreplaceable. Each of the above varieties possibly have some particular characteristic that compares favorably or perhaps superior, but the ensemble of qualities makes Great Lakes the champion blue of all time. It has received every possible award and honor eligible to Iris, including the Dykes Medal Award; it has ranked first in the A. I. S. Symposium for several years; it stands number one in the Record of Performance of all varieties; and it has been the greatest parent for blues in Iris history, and still is. Among its famous children are such varieties as Bandmaster, Blue Valley, Chivalry, Distance, Lake Shannon, Sylvia Murray and Blue Blazes; not to mention other fine varieties in which the factors from Great Lakes contributed.

The one most frequent criticism of Great Lakes is that it has some lines on its falls. Whether this criticism is justified is questionable. Blue Valley, which is undoubtedly our "bluest" Iris has these same lines, as does Lake Shannon.

True blue in Tall Bearded Iris

There is no true blue color in Tall Bearded Iris, we get an approximate blue by diluting purple with white. The presence of some yellow pigment in the coloring matter tends to give an apparent purple effect. White also dilutes this yellow, showing an appearance of a closer approach to true blue. Whether it will be possible to entirely eliminate the red and yellow, leaving pure blue color is a matter of contention.

If we concede that the ultimate in blue color has been achieved, there are still other contributing factors for improving the apparent blue color. Texture, substance, opaqueness and distribution of color affect the quality of the color greatly. A hard heavy texture will appear more blue than a velvety soft finish. The juxtaposition of alternate white and purple lines, allowing the eye to blend them, appears more blue than a smooth all over and even distribution of color.

Blue is one of our most difficult colors to appraise properly. Moisture and temperature affect it greatly; sunshine and shadow give entirely different impressions. In early morn and in the evening it will appear much more blue than at noon, though color photography of blue should be made at high noon.

PLATYCODON.

I have a few plants of each of the white, pink, blue, side by side, along with my lavender colored Chinese Bellflower (Platycodon). Balloon Flower shows a distinctly different color than the blue.

I have enclosed some seeds of the Pilosum Poppy for your trial beds.

Andrew Duchay, Chicago, Ill.

Are you expecting every copy of SAIER'S GARDEN MAGAZINE? Then send in your subscription NOW; \$2.00 per year.

PANSY PLANTING TIME IS HERE

PANSY. (*Viola tricolor*) Violaceae.

(8 days)

Pansies are best grown as a hardy annual or biennial, especially in the North. They do best in a rich sandy soil and not exposed to the hot winds; they stand some shade. Seed can be started indoors very early in the spring and the plants shifted to flats and grown on to some size in the frame where they can have shade and water or they can be planted as late as the first of August and the seedlings after they have rooted in the flats from the first transplanting, they can then be set in their outdoor beds. Pansies are definitely cool weather plants and the hotter the winds and the sun, the less success.

GIANT FLOWERING SWISS GIANTS: Large flowering Pansies in all colors and combinations. They are very popular both for the home plantings and with the commercial growers who grow for the box trade. Write for prizes in quantity.

- **Alpenglow.** A large flowered scarlet..... **PANS-1A.** 25¢
- **Berna.** Velvety dark blue..... **PANS-1B.** 25¢
- **Black King.** Dark black, one of the few black flowers..... **PANS-1K.** 25¢
- **Blumlsalp.** Soft rose with beautiful velvety blotch..... **PANS-1L.** 25¢
- **Claret.** A beautiful wine red..... **PANS-1C.** 25¢
- **Flame.** Attractive orange scarlet..... **PANS-1F.** 25¢
- **Mont Blanc.** The best pure white..... **PANS-1W.** 25¢
- **Orange Sun.** A new bright orange variety..... **PANS-1S.** 25¢
- **Rheingold.** Deep golden yellow with dark blotch on lower 3 petals.... **PANS-1R.** 25¢
- **Silver Bride.** A clear glistening white..... **PANS-1V.** 25¢
- **Ullswater.** Marine blue with darker blotch; very showy..... **PANS-1U.** 25¢
- **Yellow Master.** Exceptionally fine deep yellow..... **PANS-1Y.** 25¢
- **Swiss Giant Blend.** Our best blend of varieties..... 1/4 Oz. \$1.25 **PANS-1X.** 20¢
- **W-F Swiss Giant Blend.** A magnificent blend characterized by a predominance of rich velvety dark reds and browns together with uniformly compact plants and full rounded flowers; California grown seed..... 1/4 Oz. \$2.75; Oz. \$9.00 **PANS-1WX.** 25¢

VARIOUS PANSY STRAINS: These are all large flowered types and only the best strains are listed. They include all types.

- **Cassier's Giants.** Golden yellow giants, all with large blotch..... **PANS-2C.** 25¢
 - **White.** Large white fls with dark blotch, showy..... **PANS-2CW.** 25¢
 - **Three Blotches.** Showy colors all with 3 large dark blotches..... **PANS-2CT.** 25¢
 - **Cornation Gold.** Giant pure golden yellow; very showy..... **PANS-2N.** 25¢
 - **Englemann's Giants.** With lighter tone around edges; no solid colors.... **PANS-2E.** 35¢
 - **Maple Leaf.** Husky growers, dark green fol; full color range..... **PANS-2M.** 25¢
 - **Masterpiece.** Daintily ruffled and frilled; rich in reds and browns..... **PANS-2P.** 25¢
 - **Orchid-Flowered.** Waved and curled petals in a choice color range.... **PANS-2H.** 25¢
 - **Scottish Exhibition.** Mammoth fls heavily blotched; circular outline.... **PANS-2R.** 25¢
 - **Florist or Market Strain.** An extra choice hand made strain containing a good proportion of yellow, reds and blotched flowers with some new types added. **PANS-2F.** 25¢
 - **Oregon Giants.** Bright blend of giants; California grown seed..... **PANS-2G.** 25¢
 - **'101'.** NEW market grower strain in a beautiful selection of colors.... **PANS-2B.** 25¢
- See article on the new Pansy '101' on page 33.

V. hiemalis: Ice Pansy. They flower very early, even in the snow, and while the flowers are smaller than the regular Pansy, they are distinct and showy, especially for the time of the year when they flower. They should be given a place in the garden or rockery so as to be protected from the hot summer sun.

- **Blue Boy.** Showy silver blue..... **PANS-3B.** 20¢
- **Claret.** Beautiful wine red flowers..... **PANS-3C.** 20¢
- **Celestial Queen.** Brilliant light blue..... **PANS-3Q.** 20¢
- **March Beauty.** Dark velvety purple..... **PANS-3M.** 20¢
- **Winter Sun.** Golden yellow with showy dark blotch..... **PANS-3S.** 20¢
- **Zurich Sea.** Very showy light blue..... **PANS-3Z.** 20¢
- **Woden.** Black; king of the spring garden..... **PANS-3W.** 20¢
- **Hiemalis Blend.** All varieties mixed..... **PANS-3X.** 20¢

PANSY BLEND.. Contains all the kinds listed above..... **PANS-X.** 20¢

PIONEER SEED COMPANY

DIMONDALE MICHIGAN



**Limonium
caspia**

**Nemophila
insignis**

SOME DELPHINIUM SPECIES

(By Donald Swartz, in Am. Del. Soc. BULL.)

D. Macroncentron. A native of eastern Africa at high altitudes, grows five feet and has flowers of either blue and green or yellow and green, whitish tips and are about two inches long. This is an unusual and beautiful species.

D. Zalil. This simple perennial is worth a trial in your garden in as much as it grows to about two feet and produces pretty flowers of primrose yellow. It also keeps as cut flower longer than other forms.

D. Tatsienense. This species is similar to *D. grandiflorum* and comes from the province of Tatsien in China. It grows readily from seed. The plant is branching and bears flowers of violet to white over a long period.

D. Nudicaule. Is a native of the U. S. west coast range, attains a height of about 2 feet and bears flowers of shades of buff to brick red to a bright red. Seed germinates rather slowly.

D. Delavayi. Comes from Yunnan, China and is little known in cultivation. It grows to five feet and somewhat like the *D. elatum*, it carries graceful spikes of gentian blue flowers and is a distinct species.

D. Vestitum. A native of the high altitudes or the Himalayas, plant grows about three feet tall and has flowers of light blue with petals of dark blue.

CYCLAMEN SEED NOW

If you grow your own Cyclamen plants from seed it will soon be time to sow seeds for next year's crop. The first sowing should be made in mid-July for the early crop of large plants. Additional sowing can be made until early November to provide the 4-inch or small 5-inch plants that may be required.

Be sure to use an extremely light soil for Cyclamens, about one part light soil, one of peat or leaf mold and one part well rotted manure, make an ideal combination.

In planting Cyclamen seed, they should be spaced about one half to one inch apart in the row with a three inch space between the rows. The seedlings should be left in the seed flat a considerable time after they germinate so adequate space should be provided.

After sowing the seeds cover them with a half inch of sand, vermiculite or screened sphagnum moss and thoroughly water. Cover the flat with a piece of burlap to keep it as cool as possible and which can be kept moist till the seeds have germinated.

It is well worth the time and effort, to sterilize all soil used on Cyclamen to destroy the nematodes. Order your seeds now before it gets too late.

SUBSCRIPTION price now \$2.00 per year.

CLASSIFIED ADVERTISEMENTS

We wish to make this classified section of special value to our readers who may have plants, roots or any other item that they wish to sell or exchange.

The charge will be 20¢ per line of seven words, per insertion; four insertions at price of three. When offering plant material know your nursery laws.

HELP WANTED

MAN EXPERIENCED IN PLANT growing, propagation and some greenhouse experience. Pioneer Seed Co., Dimondale, Mich.

TO EXCHANGE

PLANTS FOR SALE

SITUATION WANTED

SEEDS FOR SALE

TREE AND SHRUB SEEDS: If you use these seeds by the ounce and pound be sure we have your name for our complete list of over 800 different sorts. Pioneer Seed Co., Dimondale, Mich.

COLINSIA VARNA SEED: Fresh seed is now ready, 50¢ per packet. Pioneer Seed Co., Dimondale, Mich.

DODECATHEON CUSICKII. Fresh seed now ready, 50¢ per packet. Pioneer Seed Co., Dimondale, Mich.

RARE PLANTS: If you grow plants you will find these columns your ideal outlet.

MAKE USE OF THE CLASSIFIED SECTION - IT'S YOURS

OUR BEST TALL BEARDED AND INTERMEDIATE

TALL BEARDED

(List Continued from Inside Front Cover)

- GOLDEN MAJESTY.** .35¢
A deep rich yellow of heavy substance; one of the best; HM, AM; ML*-42".
- GOLDEN SPIKE.** .90¢
A pure deep gold color, large, HM, AM; M*-36".
- GOLDEN TREASURE.** .35¢
Solid deep cream with central part of golden orange; AM, HM; M-40".
- G. P. BAKER.** .35¢
A fine yellow; Dykes Medal '30; M-60".
- GRAND CANYON.** .50¢
Odd blend of plum, copper and gold; HM, AM; M*-40".
- GREAT LAKES.** .60¢
One of the finest pure blues, beard almost white; DM'42; M*-40".
- GUDRUM.** .35¢
Considered by some the finest large white; best for massing in white; DM'31; M-36".
- HAPPY DAYS.** .35¢
Giant primuline yellow, veined morocco red, HM, AM; EM-39".
- HELEN MCGREGOR.** \$.50
Clear pale blue of perfect form flaring and daintily ruffled; DM'49; M-36".
- JASMANIA.** .35¢
Tall deep yellow, HM, AM; ML*-36".
- JEAN CAYEUX.** .35¢
Gray and brown blend; DM'31; M*-38".
- JEAN LAFITTE.** .40¢
Pretty glowing coppery rose blend, HM; M-38".
- JEB STEWART.** .35¢
A fine velvety rich red.
- LORD OF JUNE.** .35¢
Gigantic blue with marked old gold falls;
- LOUVOIS.** .70¢
Brown and maroon, good, AM; M-36".
- AM, HM; M-46".**
- LOS ANGELES.** .35¢
Fine white plicata; blue dots on white; HM, AM; M-46".
- MAJENICA.** \$1.50
A new pink blend of salmon-pink, HM; M*-36".
- MATTERHORN.** .50¢
The finest pure white, creamy beard with flaring falls; HM, AM; LL*-38".
- MELANIE.** \$1.25
Orchid-pink, tall stems, and a good one; HM; M-45".
- MING YELLOW.** .70¢
Smooth faultless yellow, HM, AM; M*-36".
- MISSOURI.** .50¢
Very popular deep blue, perfect form; DM'37; M*-37".
- MOROCCO ROSE.** .70¢
Rich glowing rosealine pink, HM; M-36".
- MRS. WILLARD JACQUES.** .35¢
Deep pink overlaid apricot, daintily frilled, ML-34".

- MULBERRY ROSE.** .85¢
Deep mulberry-pink shaded brown, unusual; HM, AM; L-40".
- NENE.** .35¢
Largest wine Iris grown, M-36".
- OLA KALA.** .90¢
Deep ruffled yellow self, striking; DM'42; 42".
- OMAHA.** .30¢
Soft rose to brown-cinnamon blend, M-30".
- PLUIE D'OR.** .35¢
Empire yellow; DM'28; ML-36".
- PRAIRIE SUNSET.** .65¢
Lovely blend of sunset colors; DM'41; ML-36".
- PINK CAMEO.** \$3.00
One of the new series of "flamingo" pinks; startling tangerine orange beard; M*-36".
- RAMESES.** .30¢
Olive-buff to argyle purple or tourmaline pink, DM, HM,; ML-40".
- ROSE BOWL.** .50¢
Deep rose self with haft and beard of gold; 40".
- ROSY WINGS.** .40¢
Blend of brown, red and pink with orange
- SABLE.** .50¢
Almost perfectly black with a harmonizing blue beard, HM; M*-40".
- SAN FRANCISCO.** .35¢
A large white plicata with lavender stitching; DM'27; M-42".
- SHAH JEHAN.** .80¢
Rich oriental colors, AM; good; ML-38".
- SHINING WATERS.** .35¢
Sky blue self; HM, AM; EM-48".
- SNOW FLURRY.** .50¢
Perfectly formed blooms of pure ice-white, frilled and ruffled, fine foliage; AM; EM*-48".
- SPUN GOLD.** .90¢
Lovely velvety yellow; DM'44; ML-38".
- STARDOM.** .80¢
Coppery pink and apricot, HM, AM; M*-34".
- THE BLACK DOUGLAS.** .35¢
One of our darkest and richest Iris; S erect, madder-violet; F semi-flaring violet with bronze beard; ML-36".
- THE RED DOUGLAS.** .60¢
A fine new vibrant red; DM'41; M*-38".
- TIFFANJA.** .90¢
Colonial buff and brown plicata, most beautiful of its class; HM, AM; 42".
- TIFFANY.** .40¢
Yellow plicata with rose, unusual; M-36".
- WABASH.** .45¢
A lovely white bicolor, falls a rich Hyacinth-violet with small margin of snow-white; S a pure white; DM'40; M-39".
- WHITE CITY.** .70¢
Whitest white; DM'40; M*-42".
- WINTER CARNIVAL.** .50¢
A fine white, widely flaring falls, snow-white in color, the throat heavily tinted with gold; ML*-38".

INTERMEDIATE BEARDED IRIS

This group comes into flowering after the Dwarf Iris and continues into the Tall Bearded season. They run from 18" to 28" high and are excellent for early flowers; they give a more dainty display for small border plantings. Delivery starting July 15th to fall.

- ABELARD.** .35¢
Prolific bright mahogany to livid brown;
- ARCHEVEQUE.** .40¢
Free blooming wine-red to black, a grape color with grape odor; M*-24".
- CHALLENGER.** .35¢
Richest purple-black, HM; E-28".
- CRYSORA.** .35¢
Rich yellow blooms sometimes in fall; E-26".
- DALILA.** .35¢
Flesh and cherry edged white; M*-24".
- WARBLER.** .40¢
DOXA. .35¢
Lovely olive-buff with greenish cast; E-18".
- GAY HUSSAR.** .35¢
Variegata in chrome and oxblood red; good; M-18".
- GLEE.** .35¢
A dwarf, frilled soft yellow; E-18".
- ELIZABETH HUNTINGTON.** .50¢
Medium blue with pretty crinkled flowers, pretty; M-18".
- IRIS KING.** .35¢
Old gold and deep brown-maroon, S edged red-brown; M-24".
- KING KARL.** .35¢
Popular cream, dotted rose; M-33".
- LA NEIGE.** .35¢
Lovely waxy cream-white; M*-28".
- MA MIE.** .35¢
Lovely white frilled blue; M*-28".
- NEHAWKA.** .40¢
Darkest blue-purple plicata on white back ground, dandy; M-28".
- RED ORCHID.** .35¢
Brilliant ruby-brown with gold beard, vigorous and prolific; E-28".
- SPARK.** .35¢
Striking fiery brick-red; E-28".
- TAN TOY.** .35¢
Lovely tan-brown; ML*-18".
- TITMOUSE.** .35¢
Table Iris with lovely formed flowers in amber-yellow speckled and edged violet; M 28".
- VALENCIA.** .35¢
Ruffled orange-buff; ML-24".
- Table Iris in very small clear yellow formal flowers; M*-26".
- WIDGET.** .60¢
Table Iris, white plicata speckled lavender; EM-24".
- ZUE.** .40¢
The most crinkled and ruffled Iris grown; pearl-gray; the white form of Elizabeth Huntington; E-18".

..(List Continued on Back Cover)

PIONEER SEED COMPANY - DIMONDALE MICH.

DWARF AND REBLOOMING IRIS

DWARF IRIS

For the rock garden and for low plants along walks, nothing is more charming than these hardy little Iris.

They are early bloomers, some starting as early as March and continue to May. They grow 3 to 6 inches tall, are prolific and come in all the colors of the Tall Bearded Iris. They have become very popular of late and the varieties offered are among the very best.

Delivery starts the middle of July and continues to fall. Order early.

ARAMIS.	.35¢
Early light yellow; E-5".	
ARENARIA.	.35¢
Yellow with grassy foliage.	
AZUREA.	.35¢
Palest light blue with blue-green veins on falls, white beard; EE-3".	
BLACK MIDGET.	.35¢
A very dark purple with soot black buds; M-8".	
BLUE BEARD.	.35¢
Olive white with purple streaks on falls, unusual; E*-8".	
BLUE JADE.	.35¢
Large dark blue-purple; 8".	
DIXMUDE.	.35¢
Rich violet-purple; E-10".	
DR. MANN.	.40¢
Long season smoky to petunia violet, prolific bloomer; M*-6".	
EBURNA.	.35¢
Whitish yellow; E-10".	
FLORIDA.	.35¢
Dwarf light yellow to deep cream; E-6".	
ELF.	.40¢
Bright red with little or no purple; rose styles, vigorous; E-9".	
GRAMINEA.	.35¢
Rich red-violet; E-12"....	
LADDIE BOY.	.35¢
Lovely violet-blue; E-15".	
LITTLE JEWEL.	.40¢
A brown-tan blend and cream gold beard; E-10".	
LOBELIA.	.35¢
Dark blue self; E-8".	
MIST O'PINK.	.75¢
Showy red-pink with flaring F, very dainty and small, one of the best new dwarfs; E*-8".	
ORANGE QUEEN.	.35¢
Deep rich yellow of excellent substance; E*-6".	
PUMILA ATROVIOLACEA.	.25¢
The Easter Iris; dark violet; EE*-5".	
ROSE MIST.	.35¢
A lovely mauve-pink; E-10".	

(ALL ORDERS PREPAID)

All orders of \$1.00 or more are prepaid, add 20¢ to all Iris orders under \$1.00.

SILVER ELF.	.35¢
Friiled silver-white with royal purple flush on falls; E-10".	
SNOW MAIDEN.	.35¢
White with faint blue cast, olive-green and ochre veins at haft; 16 inches tall.	
SOCRATES.	.35¢
Uniform garnet-red tones, a fine massing variety; E-6".	
SPRING SKIES.	.35¢
More vigorous Azurea; EE-6".	
STEWART.	.35¢
Dainty and small yellow self; EE*-6".	
TAMPA.	.35¢
Red toned with cream and dainty grassy foliage; EE-10".	
TINY TONY.	.35¢
A lovely red-toned variety; E*-4".	
TONY.	.35¢
Richest wine, orange beard; E-9".	
VILLEREAL.	.35¢
Variegata in old rose; E-8".	
YELLOW FRILLS.	.35¢
Deep yellow, dusted gold, S frilled; E*-10".	

REBLOOMING

These beautiful Iris will give two blooming periods each season, especially in the southern two thirds of the U. S.

Here in Michigan we can even get many to bloom in the fall months. If these plants can have a little rest after spring flowering, they will bloom better in the fall.

Delivery starts July 15th continuing to Oct.

AUTUMN ELF.	.35¢
Olive-cream S lavender falls; M*-18".	
AUTUMN FLAME.	.80¢
Lovely deep red bicolor; E*-34".	
AUTUMN FROST.	.35¢
Alabaster white; EM-36".	
AUTUMN HAZE.	.35¢
Light lavender and hyssop-blue; E-30".	
AUTUMN KING.	.35¢
A lovely free blooming bicolor; M-30".	
AUTUMN QUEEN.	.35¢
One of the best white rebloomers, popular, fragrant; E-18".	
AUTUMN SURPRISE.	.35¢
Lovely medium blue; M, 24".	
DORCAS HUTCHESON.	.35¢
Deep violet self; M*-22".	
EQUINOX.	.35¢
Purple bicolor; ML-26".	
FALL BEAUTY.	.50¢
S bronze-brown, F violet-blue; E*, 48".	
FROST QUEEN.	.35¢
Free frosty white; M*-20".	
GLADSONG.	.35¢
Yellow ground plicata, unusual; M-24".	
GOLDEN CATARACT.	.35¢
A lovely golden yellow with vivid orange beard; EM*-20".	

GOLDEN HARVEST.	.35¢
Olive and citron yellow; E-18".	
JANE KRAY.	.35¢
Red-violet with white beard; EM-34".	
KANSAS INGLESIDE.	.35¢
Red toned self on copper side; LM*-32".	
KING JUNIOR.	.35¢
An improved and more red Autumn King; M-30".	
LIEUTENANT DE CHAVAGNAC.	.35¢
Violet, bronze and cream; E-10".	
MARTIE EVEREST.	.40¢
Uniform blue, very lovely; E*-33".	
MRS. WALTER LAMB.	\$1.00.
Violet toned or pigeon-throat colors; 30".	
OCTOBER BLAZE.	.35¢
Dancing red tones; EE*-34".	
OCTOBER OPERA.	.35¢
Pretty burgundy-red, M*-24".	
OLIVE WHITE.	.35¢
Lovely deep cream; E*-18".	
SANGREAL.	.35¢
Slightly frilled yellow; EM*-28".	
SEPTEMBER SKIES.	.35¢
A fine purple-red; M*-18".	
SOUTHLAND.	.35¢
A lovely golden yellow; M-24".	
WHITE AUTUMN KING.	.35¢
Very early snow white; EE-28".	
ULTRA.	.35¢
Ultramarine blue; E-25".	

SIBERIAN IRIS

This group has slender grass-like leaves, with flowers massed on top of slender stems. Blooms with the Tall Bearded Iris making excellent clumps in any border.

Shipment made in early spring or after September 15th. Protect with mulch when fall planted.

CAEZAR.	.35¢
Very dark blue-amaranth, AM; 30".	
CAEZAR'S BROTHER.	.80¢
One of the finest dark varieties, intense velvety blue, HM; 48".	
EMPEROR.	.35¢
Rich deep violet-blue; collected in China, AM; 48".	
HELEN ASTER.	\$2.00.
Well rounded rosy red with halo near the throat of the falls, AM, HM; 30".	
PERRY'S BLUE.	.45¢
Sky blue with white; one of the best, AM; 46".	
PSEUDACORUS.	.40¢
Bright yellow, tall, late; 40".	
SNOW QUEEN.	.45¢
A firm and excellent snow white, waxy texture; AM; 38".	
SKYLARK.	.35¢
Exquisite soft blue; 40".	

(See Page 40 for More Iris Listing)

PIONEER SEED COMPANY - DIMONDALE MICH.